REGIONAL FORENSIC SCIENCE CENTER

Pathology Division
2015 Annual Report

Timothy P. Rohrig, Ph.D. Director

Jaime L. Oeberst, M.D. District Coroner-Chief Medical Examiner

HISTORY/OVERVIEW

The Regional Forensic Science Center officially opened on December 21st, 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 the Autopsy Service.

As mandated by law, the District Coroner has the responsibility for investigating deaths within Sedgwick County that are a result of violence, unlawful means, suddenly when in apparent health, not regularly attended by a physician, any suspicious or unusual manner, when in police custody, or 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 includes natural, accident, homicide, suicide, and undetermined. Undetermined manner of death is used when circumstances are unknown or are unclear.

Over the last decade, the number of cases reported annually to the office has averaged 3,003, with a steady increase year after year. There has been greater than a one and half fold increase in the number of reported cases and approximately a two and half fold increase in the number of required examinations and medical records review since 1998.

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

PATHOLOGY LEADERSHIP

District Coroner-Chief Medical Examiner
Jaime L. Oeberst, M.D.

Chief Medical Investigator
Shari L. Beck, F-ABMDI

COUNTIES SERVED

In 2015 [Figure 1], the majority of service provided was for Sedgwick County; however, the Center does provide on a fee for service basis, autopsy examinations for many of the counties in the southcentral regional of the state.

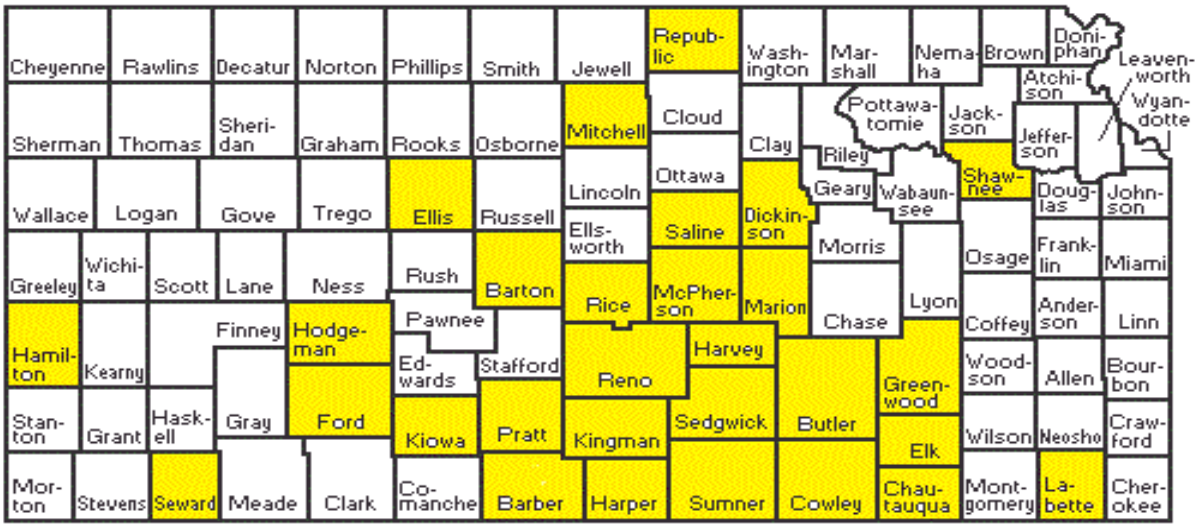
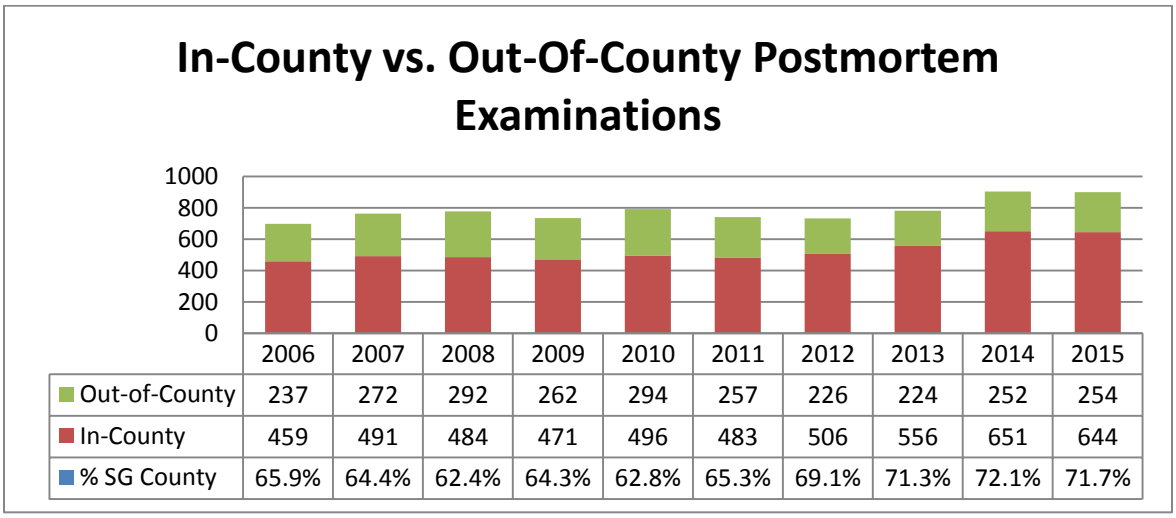


Figure 1 The Pathology Division provided service to Sedgwick County and 29 other counties in the state of Kansas.

DISTRIBUTION OF CASES: IN-COUNTY VS OUT-OF-COUNTY

The Pathology Division serves as a resource to other counties in the state of Kansas. In 2015, 28% of the examinations were performed for other counties [Figure 2]. Overall, In-County cases have shown a rise over the last 10 years, although in 2015 there was a small decrease.

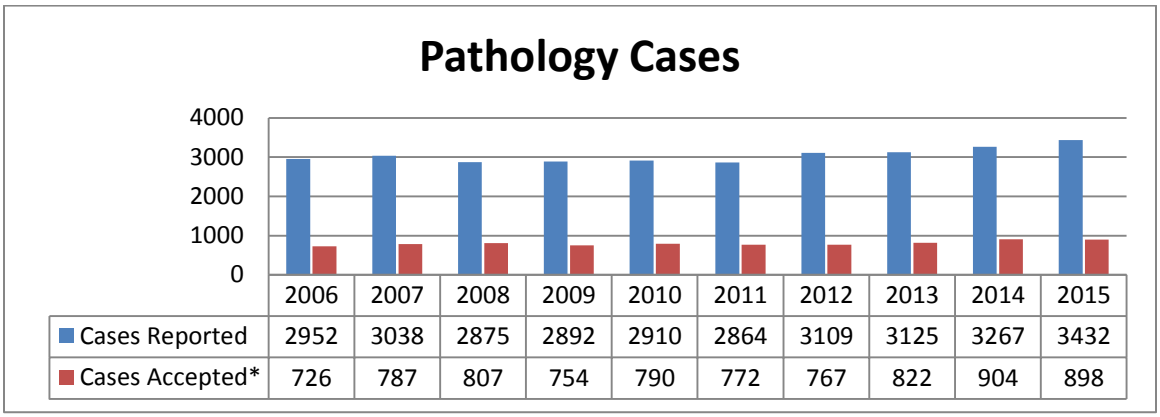


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Out-of-County	237	272	292	262	294	257	226	224	252	254
In-County	459	491	484	471	496	483	506	556	651	644
% SG County	65.9%	64.4%	62.4%	64.3%	62.8%	65.3%	69.1%	71.3%	72.1%	71.7%

Figure 2 Examinations include Full and Partial Autopsies, External Examination, Non-human Skeletal Remains, and Records Reviews.

MEDICAL INVESTIGATIONS

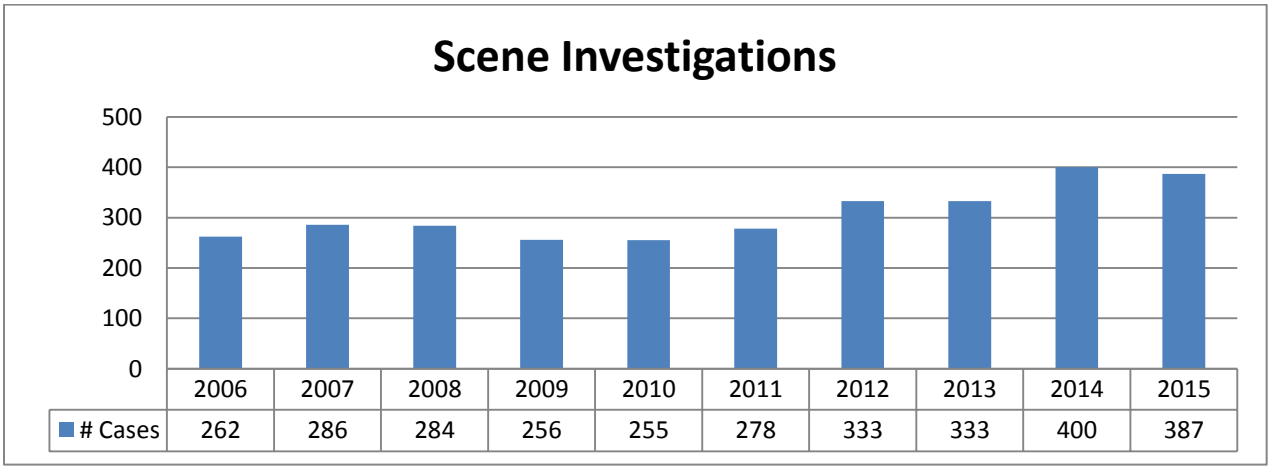
The Pathology division has a Chief Medical Investigator and four Medical Investigators. The Medical Investigators are on duty year round, twenty-four hours a day, seven days a week. The Medical Investigator serves as the "eyes" and "ears" of the Coroner. The investigators triaged 3432 reported deaths. The District Coroner accepted jurisdiction or assisted in 898 cases [Figure 3] of the reported deaths. On average, over the last 10 years, accepted cases constitute 26% of the total number reported to the office.



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Cases Reported	2952	3038	2875	2892	2910	2864	3109	3125	3267	3432
Cases Accepted*	726	787	807	754	790	772	767	822	904	898

Figure 3 Records Reviews, Autopsies, Partial Autopsies, External Examinations, and Non-human Skeletal Remains.

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.



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
# Cases	262	286	284	256	255	278	333	333	400	387

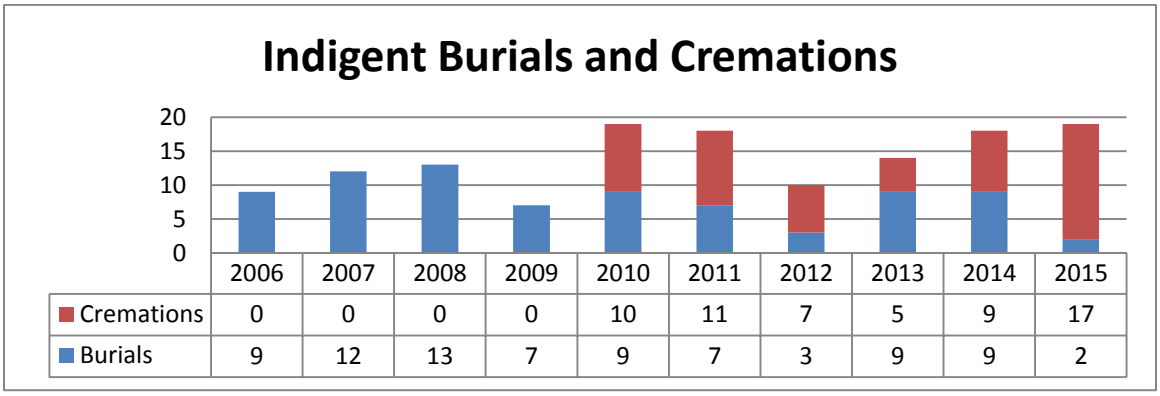
Figure 4 Number of scenes that Medical Investigators worked.

INDIGENT BURIALS and Cremations

Pursuant to K.S.A. 22a-215, Sedgwick County is required to decently bury/cremate 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 burials/cremations. The Center maintains a contract with a local mortuary to handle the disposition of the remains.

Following notification of an indigent/unclaimed decedent, it becomes the responsibility of the Medical Investigations section to perform a diligent search for a family member or concerned party willing to claim the decedent. The following provisions accompany a claim; 1) When any family member or concerned party wishes to make any decision regarding burial arrangement, he/she must "claim" the body thereby assuming all responsibility for the provision of a burial, and 2) Sedgwick County will not be a guarantor of burial expenses for any body that has been claimed by a family member or concerned party.

After a diligent search, the District Coroner is charged with the responsibility for disposition of the decedent remains. Since 2004, there had been a significant increase in the number of unclaimed bodies [Figure 5]. In 2015, 19 bodies remained unclaimed / indigent.



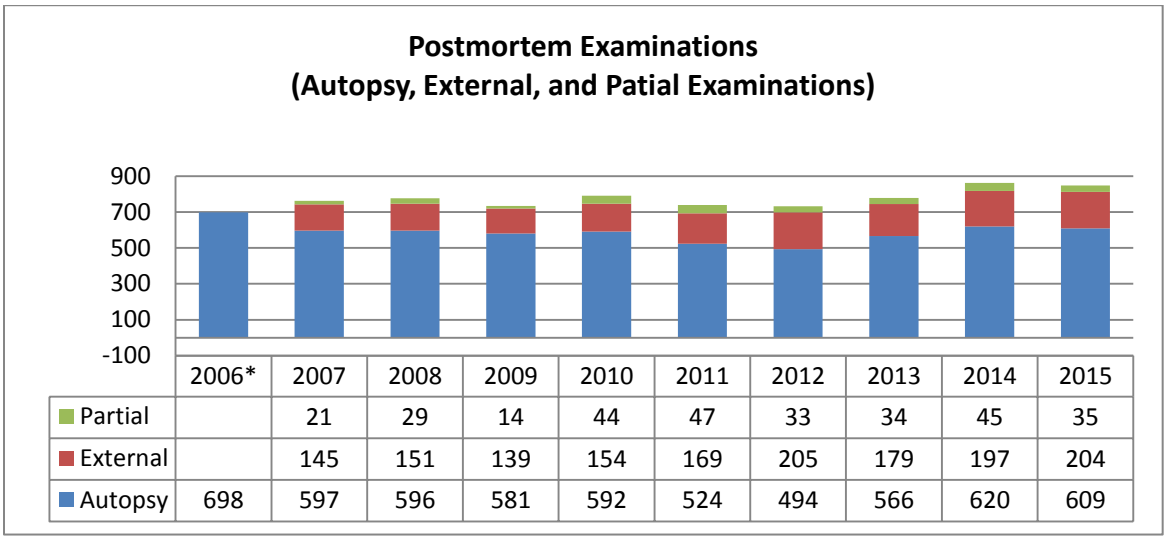
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Cremations	0	0	0	0	10	11	7	5	9	17
Burials	9	12	13	7	9	7	3	9	9	2

Figure 5 Number of Indigent Burials/Cremations that the Center took responsibility.

CASE SUBMISSIONS

In 2015, 3432 deaths from Sedgwick County and referring counties were reported. For Sedgwick County deaths, analysis of the scene, circumstances of the death and the decedent's medical history were key factors in determining coroner's jurisdiction. Coroner's jurisdiction for the referring counties was determined by the referring county Coroner. Jurisdiction was assumed or assistance was provided in 898 cases, of which 609 were complete autopsies. Figure 6 shows the number of postmortem exams, that includes full autopsies, partial autopsies, and external examinations. External examinations are performed in cases where scene investigation, circumstances, and medical history and the exam are sufficient to certify the death.

The District Coroner also performed postmortem examinations for other counties within the state of Kansas [See Figure 2].

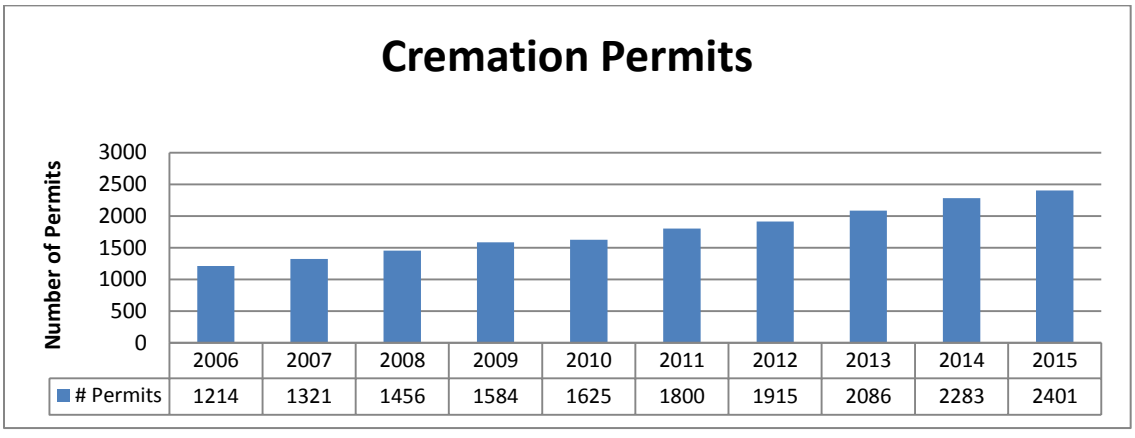


	2006*	2007	2008	2009	2010	2011	2012	2013	2014	2015
Partial		21	29	14	44	47	33	34	45	35
External		145	151	139	154	169	205	179	197	204
Autopsy	698	597	596	581	592	524	494	566	620	609

Figure 6 *Until 2007, only the total number of examinations was tracked. Compared to 2006, there was a 8% increase in the number of Postomortem Examinations in 2015.

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. Figure 7 illustrates the steady increase of cremation permits signed by the Coroner.

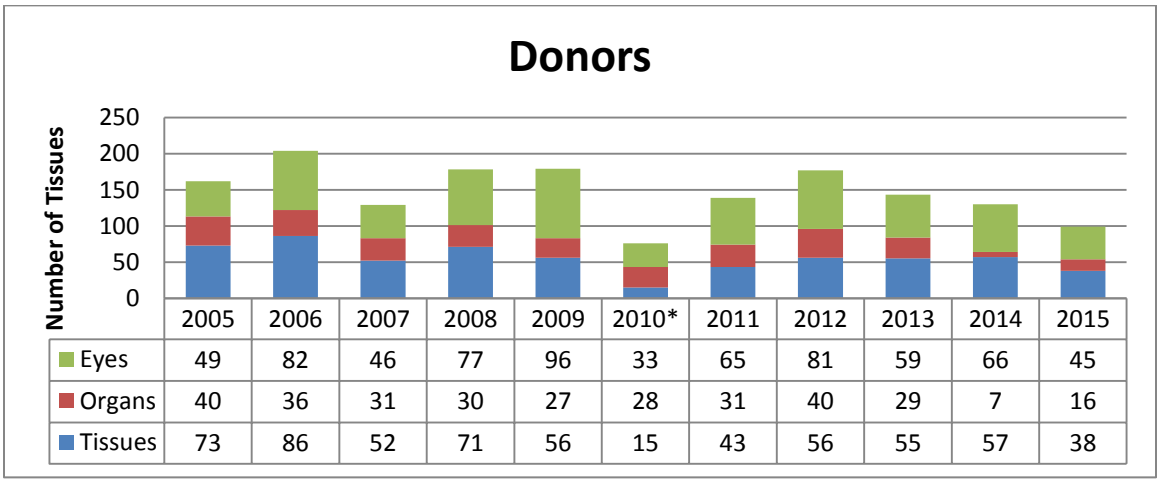


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
# Permits	1214	1321	1456	1584	1625	1800	1915	2086	2283	2401

Figure 7 The number of cremation permits is steadily increasing year after year.

TISSUE DONATIONS

The Pathology Division works in cooperation with procurement agencies [Kanas Eye Bank, Midwest Transplant Network, and Heartland Lions Eye Bank] to facilitate organ and tissue donation in cases where the death falls under the jurisdiction of the coroner.



	2005	2006	2007	2008	2009	2010*	2011	2012	2013	2014	2015
Eyes	49	82	46	77	96	33	65	81	59	66	45
Organs	40	36	31	30	27	28	31	40	29	7	16
Tissues	73	86	52	71	56	15	43	56	55	57	38

Figure 8 *Drop in number for 2010 is a reflection of inability to track numbers due to lack of in-house procurement associated with remodeling of the tissue suite.

MANNER OF DEATH

In addition to determining cause of death, the District Coroner is responsible for determining the manner of death. Figure 9 shows the breakdown of the deaths by manner. Homicides are deaths that result from injuries that are a result of the actions by another person. Homicides constituted 5% of the cases for 2015. The majority (71%) of these deaths resulted from gunshot wounds [Figure 10]. Suicides are defined as deaths that result from a purposeful action to end one's own life. In 2015, 12% of the cases were certified as suicides. Deaths that were certified as accidents are those that result 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 32% 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 5% of the total caseload.

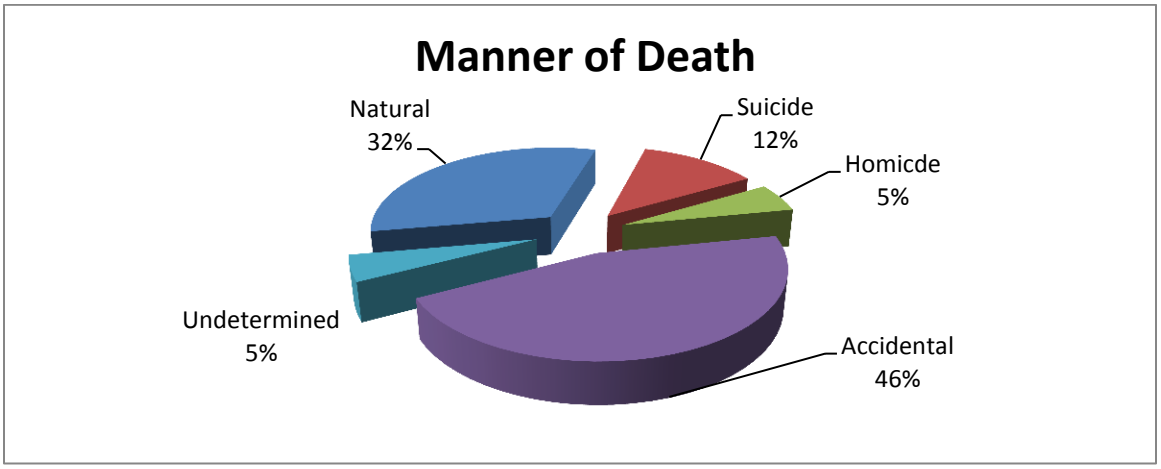


Figure 9 Accidental deaths was the leading percentage of manner of death reported to the Center.

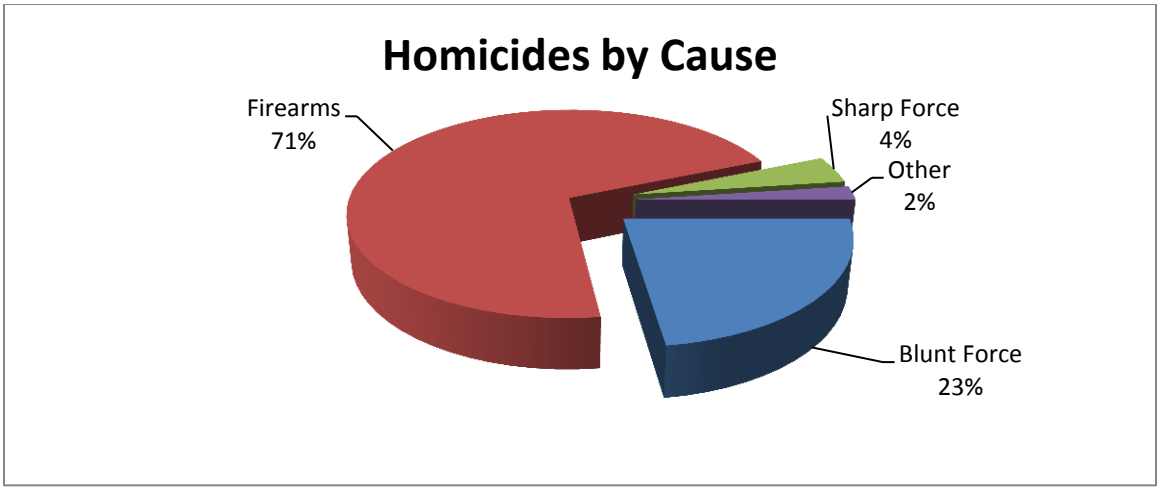


Figure 10 Firearms are utilized the greatest percentage of the time in homicides.

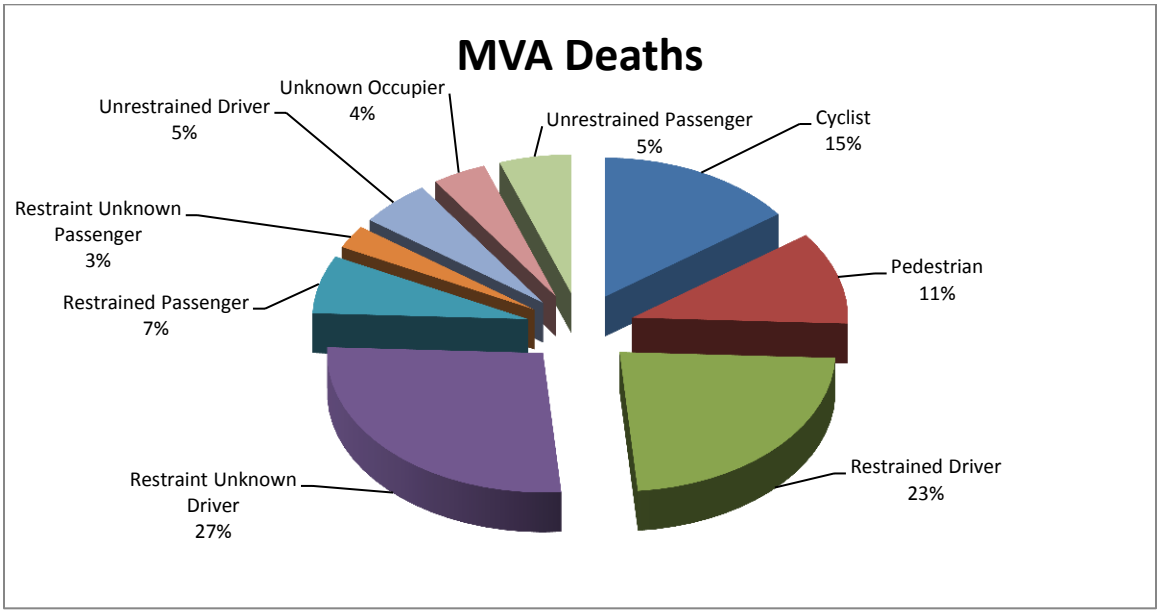


Figure 11 Unrestrained drivers and passengers account for the larget percentage of MVA deaths.

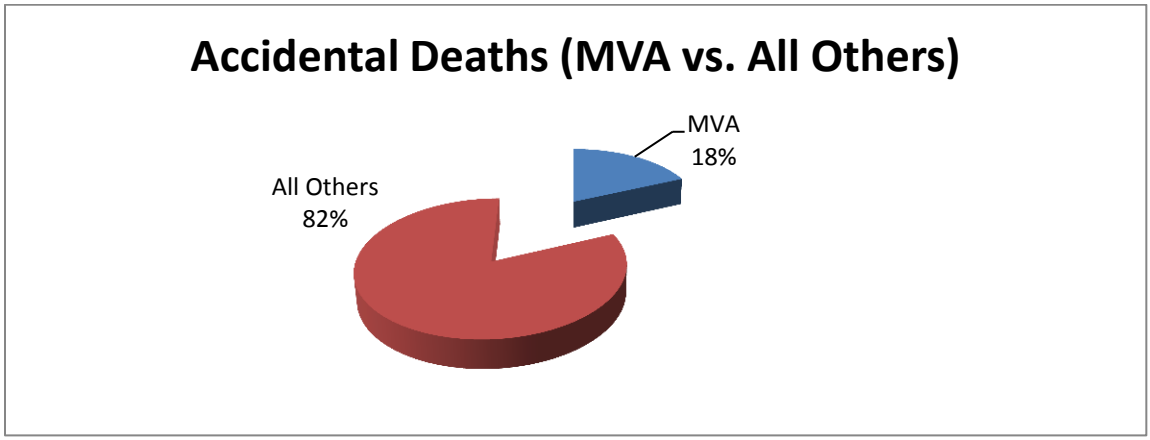


Figure 12 MVA deaths account for 16% of all accidental deaths.

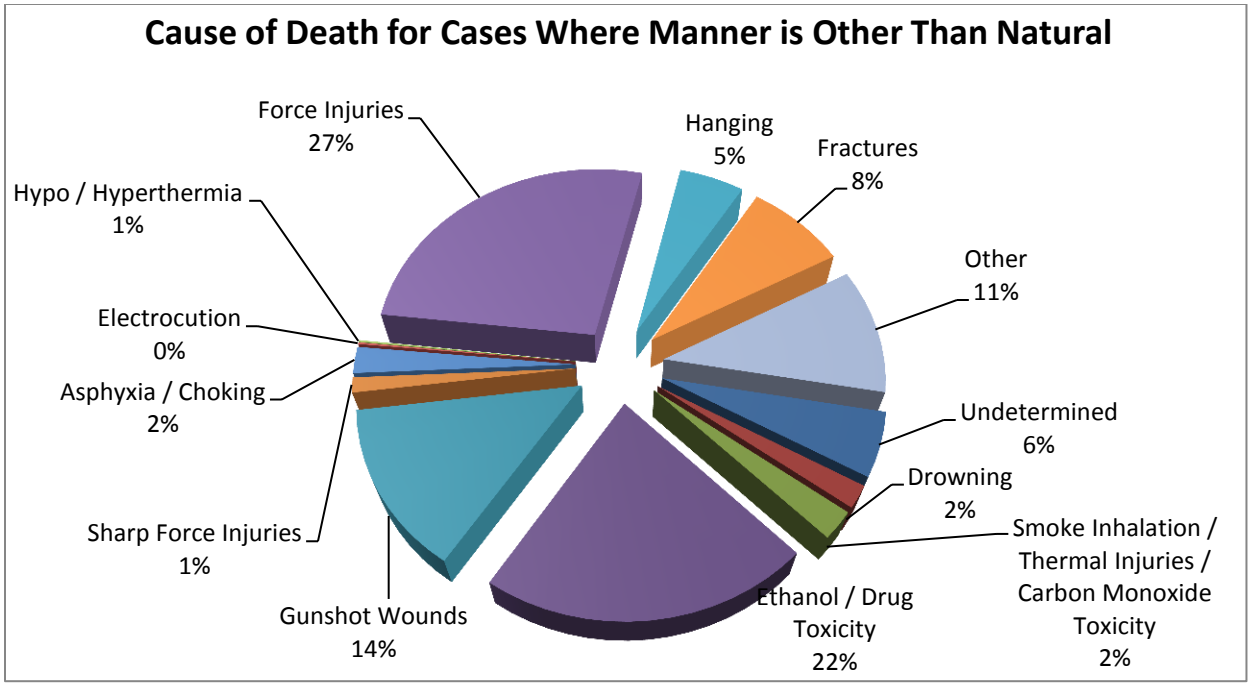


Figure 13 Ethanol / Drug Toxicity is the leading cause of non-natural deaths.

SUICIDES

In 2015, 108 cases were certified as suicide. The vast majority of suicides were white male adults [Figure 14, Figure 15, and Figure 16].

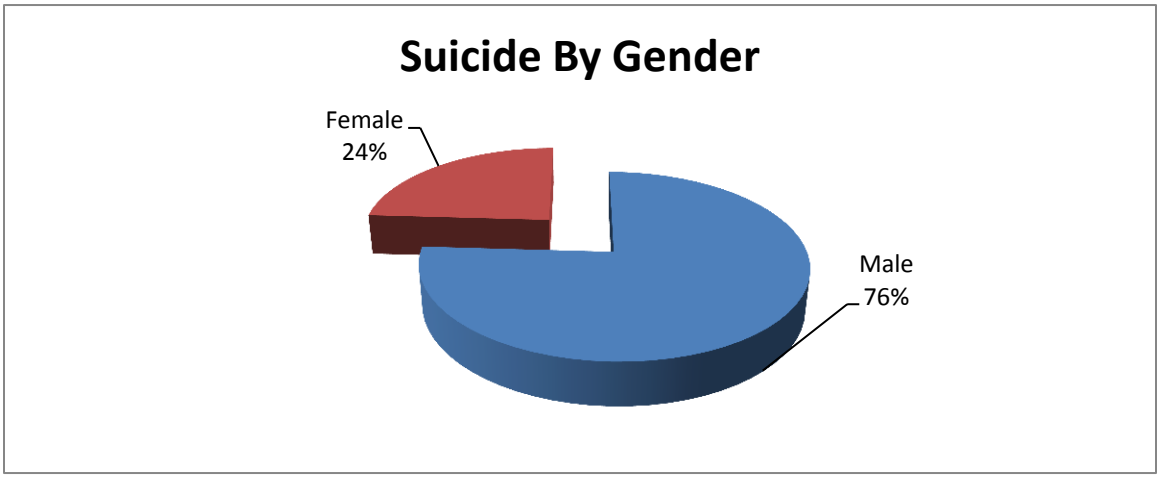


Figure 14 Males commit the greatest percentage of sucides.

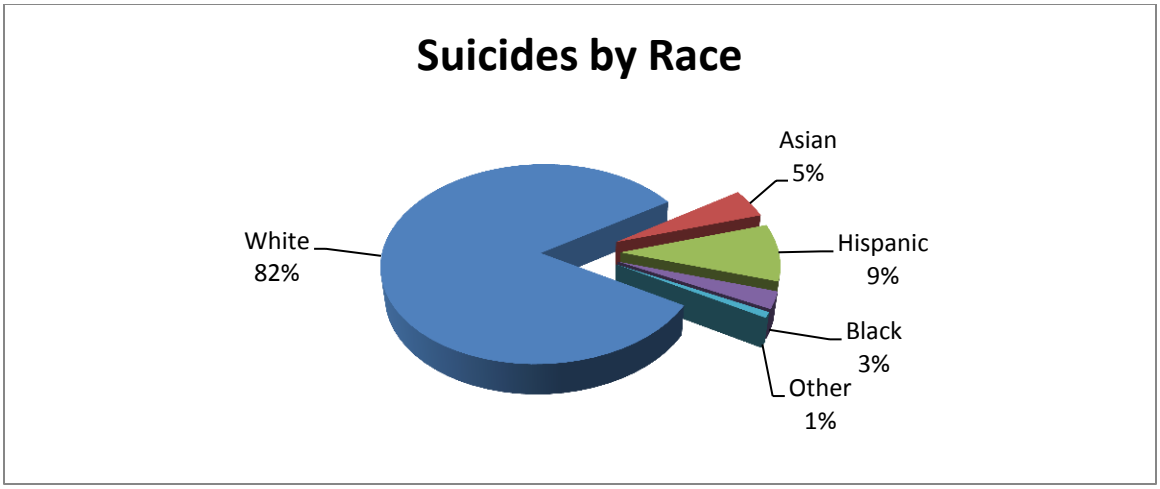


Figure 15 The race that commits the greatest percentage of suicides is White, with Asians being the lowest percentage reported.

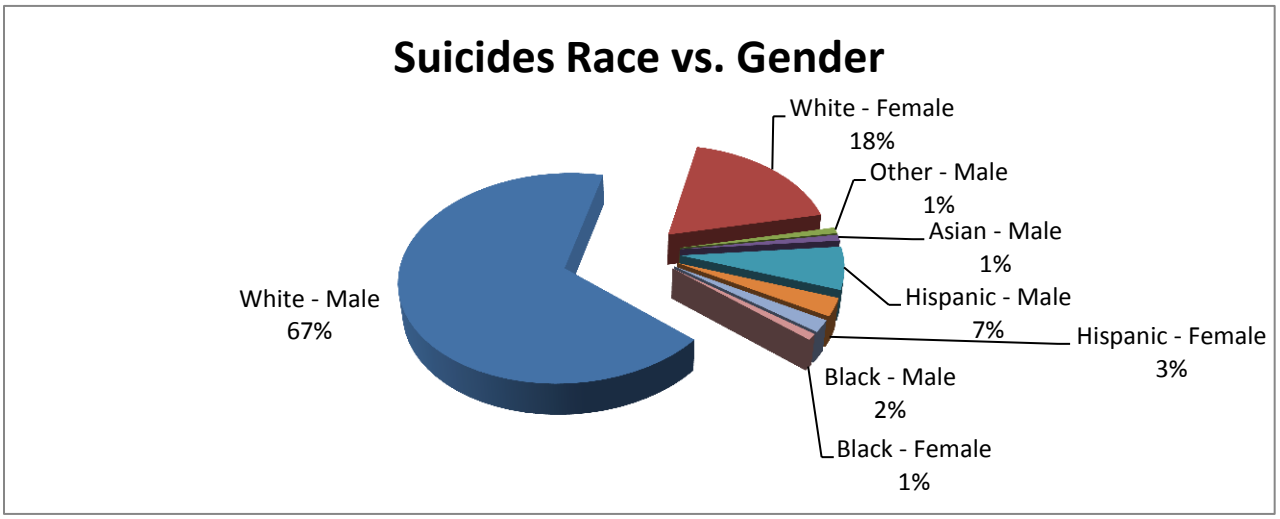


Figure 16 Males in general and white males in particular commit the greatest percentage of suicides

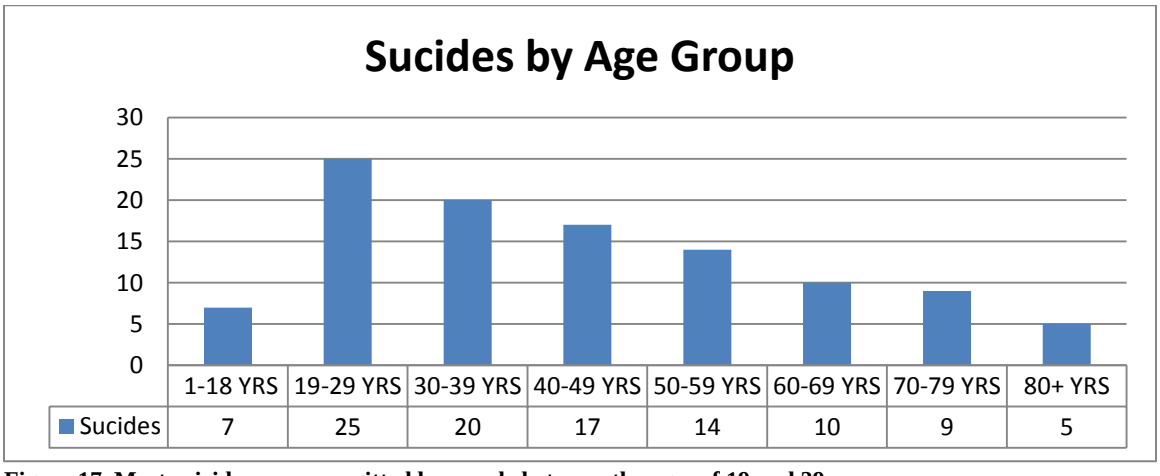


Figure 17 Most suicides wer committed by people between the ages of 19 and 39.

In 2015, the predominate suicide methods were firearms, hanging, and drug related deaths.

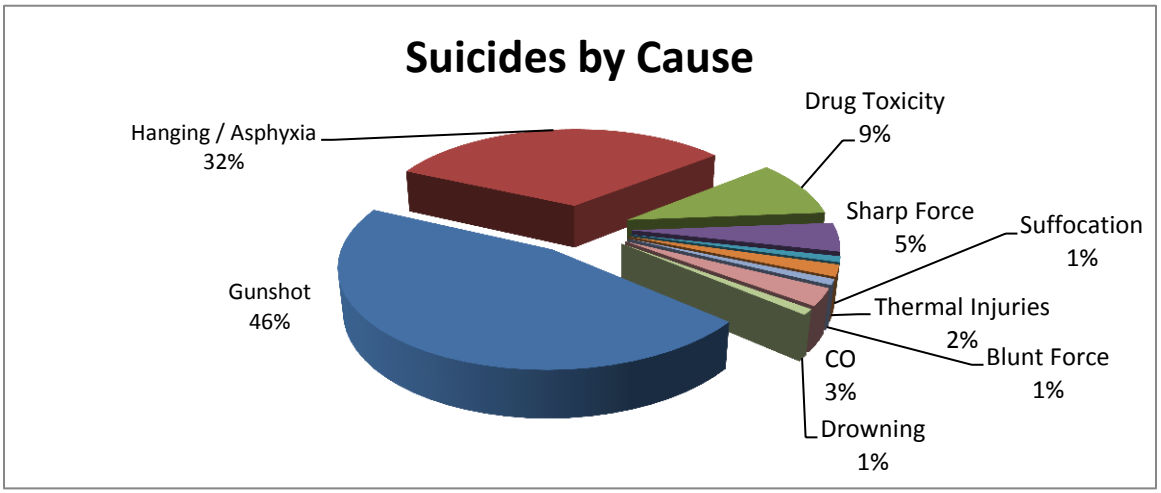


Figure 18 Most suicides are committed by the use of a firearm.

TOXICOLOGY

In 2015, there were 851 pathology cases submitted to the toxicology laboratory. Not all cases require toxicological analyses [Fig. 19]; the majority of these are associated with extended hospital stays following the initial event.

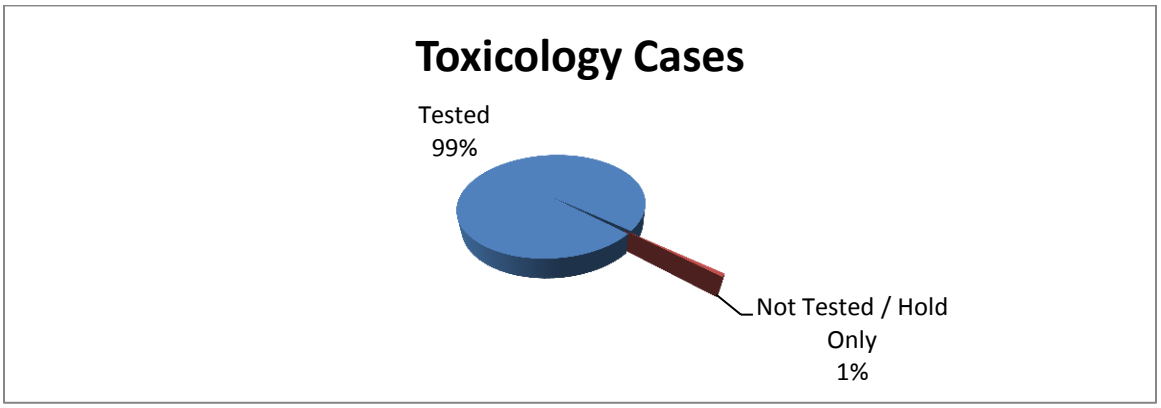


Figure 19 Eight hundred forty-four (844) of the eight hundred fifty-one (851) pathology cases submitted to the toxicology laboratory were analyzed.

In 2015, there were specimens from forty-five (45) post-mortem cases submitted for testing to the toxicology laboratory from drivers of motor vehicle deaths. [Figure 20] depicts the results of testing for Ethanol (EtOH), Tetrahyrdocannabinol (THC) / Carboxytetrahydrocannabinol (THCA), and other drugs. Approximately 50% of fatally injured drivers had alcohol and/or drugs in their system. As shown in the figure twenty-one (21) tests resulted in negative for EtOH and negative for drugs, eight (8) were positive for EtOH and negative for drugs, and four (4) were negative for EtOH and positive for amphetamine / methamphetamine. Also, there were five (5) cases that drivers tested positive for THC / THCA.

Of the EtOH positive specimens, seven (7) resulted in values of 0.24 gm% or higher, one (1) in the 0.16 to 0.23 gm% range, one (1) in the 0.08 to 0.15 gm% range, and two (2) in the 0.02 to 0.07 gm% range.

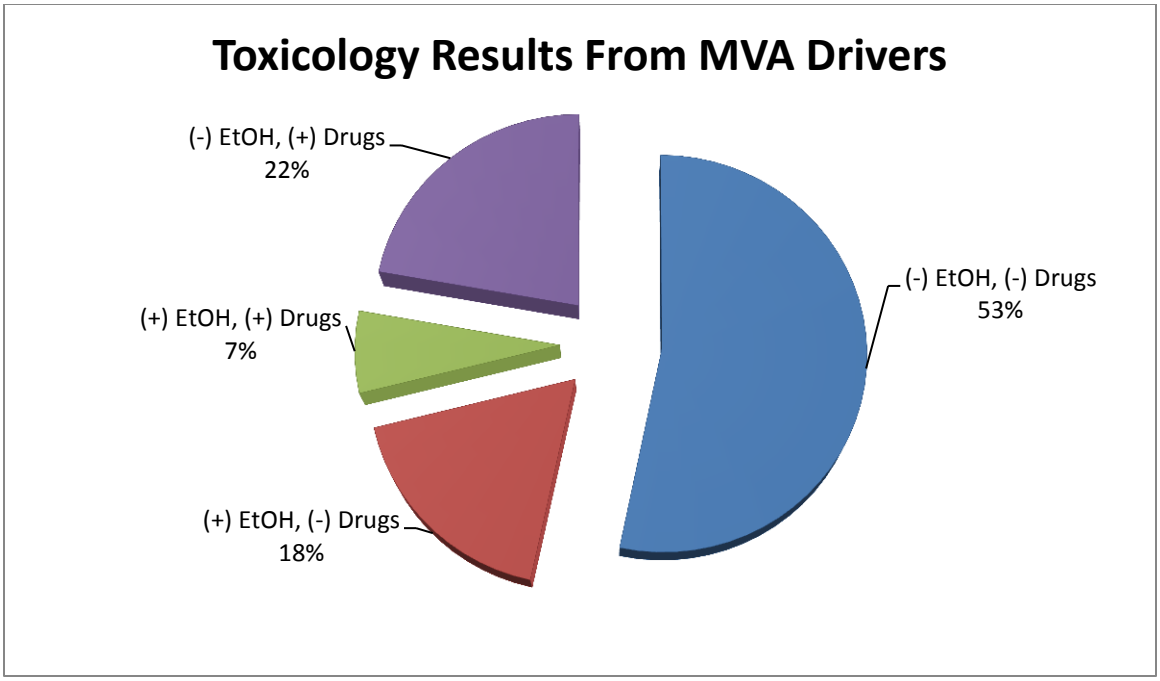
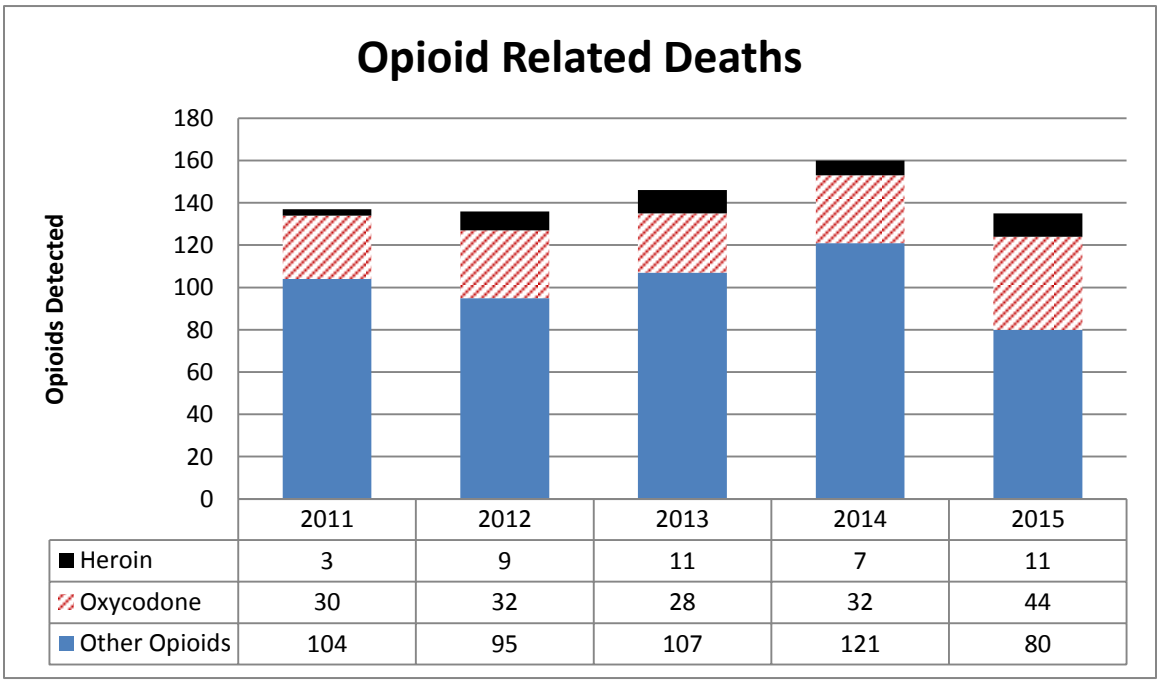


Figure 20 Alcohol and drug results from fatally injured drivers.

OPIOID RELATED DEATHS

Opioid related deaths are on the rise, there has been an approximately 35% increase over the last 5 years. The most dramatic increase, seven fold, has been with the number of heroin related deaths. The largest increase was experienced in 2015.



	2011	2012	2013	2014	2015
Heroin	3	9	11	7	11
Oxycodone	30	32	28	32	44
Other Opioids	104	95	107	121	80

Figure 21 Postmortem cases with positive opioid results.