

WEST VIRGINIA CHILD FATALITY REVIEW ANNUAL REPORT

Calendar Year 2014 (January-December)



Office of the Chief Medical Examiner 619 Virginia Street, West Charleston, West Virginia 25302 Johanna Bossé, MS, Epidemiologist



CHILD DEATHS IN WEST VIRGINIA 2014

A Report of the West Virginia Child Fatality Review Panel (WVCFRP)

Jim Justice* Governor

Bill J. Crouch*
Cabinet Secretary
West Virginia Department of Health and Human Resources

Rahul Gupta, MD, MPH, FACP* Commissioner and State Health Officer

Allen Mock, MD MS DABP*
Chair, WVDVFRP
Chief Medical Examiner
Office of the Chief Medical Examiner

Maggie Molitor*
WVDVFRP Coordinator
Office of the Chief Medical Examiner

Johanna L. Bossé* WVDVFRP Epidemiologist Office of the Chief Medical Examiner

Jeannè Tucker*
WVDVFRP Data Abstractor
Office of the Chief Medical Examiner

^{*} In office at time of report distribution

Acknowledgments

We wish to acknowledge the dedication and support of those who have been involved, past and present, with the child fatality review process in West Virginia since its inception 1994 and the formation of the Child Fatality Review Panel in 1996. Many agencies and individuals have given their time and talent as the Team has evolved over the years. Members of the Team, past and present, have served without recognition or compensation.

Executive Summary

This report embodies the findings of the Child Fatality Review Panel for the preventable fatalities of West Virginia's children in the calendar year 2014. The numbers reflected in this report are only representative of the findings of the WVCFRP and may differ from information reported by the West Virginia Health Statistics Center. In 2014, the review panel had 97 preventable recorded fatalities for children between the ages of 0-17 years. The leading manner of death among infants was undetermined. Among those infant deaths, the most recurrent risk factor was co-sleeping. The co-sleeping deaths were reported in the categories of Sudden Infant Death Syndrome (SIDS), suffocation, homicide, or unexplained infant death. The most common manner of death in children age one year and older was accidental deaths with motor vehicle accidents being the primary cause.

2014 West Virginia Infant Deaths

An infant death is defined as the death of a child subsequent to birth but preceding their first birthday. Generally, most infant deaths are considered to be "natural" as they befall due to a medical condition. In 2014, the three leading causes of infant death in West Virginia were unknown (undetermined), asphyxia, and homicide by weapon.

- 40 preventable West Virginia resident infant deaths
- 65.0% of those deaths were due to unknown causes
- 17.5% of the deaths were due to asphyxia
- 7.5% of deaths were related to homicide by weapon

2014 West Virginia Childhood Deaths

A childhood death is defined as the death of a child following their first birthday but previous to their eighteenth birthday. Most childhood deaths were considered to be accidental in nature. In 2014, the three leading causes of childhood death in West Virginia were motor vehicle accidents, suicide by weapon, and drowning.

- 57 preventable West Virginia resident childhood deaths
- 40.4% of those deaths were due to motor vehicle accidents
- 14.0% of those deaths were due to suicide
- 10.5% of those deaths were due to drowning

Introduction

About the Panel

The Fatality and Mortality Review Team, for the purposes of this report, the West Virginia Child Fatality Review Panel (WVCFRP), is a statutory body enabled by the West Virginia Legislature under WV Code §61-12A-1. Team coordination and staff services are housed in the Office of the Chief Medical Examiner (OCME). The WVCFRP is responsible for reviewing the facts and circumstances surrounding deaths of all children, under the age of eighteen, who were residents of the State of West Virginia at the time of their death.

The WVCFRP is required to provide statistical data and analysis concerning the causes of child fatalities in West Virginia, promote public awareness of the prevalence and causes of child fatalities, as well as include recommendations for their reduction. The fundamental objective of the WVCFRP is to prevent future deaths of children by providing necessary tools and information to expectant parents, parents, grandparents, families, appropriate agencies, and the general public. It is with hopefulness that the WVCFRP anticipates that recommendations will be employed to make the needed changes in actions and policies to protect the children, while holding perpetrators responsible for their actions, and reducing the overall number of child fatalities that occur in the state.

WVCFRP Membership

According to statute, the WVCFRP operates under the auspices of the OCME, with the state Chief Medical Examiner acting as the chair of the Team and the coordinator housed within that office as well. Other mandated members of the Team include:

Two prosecuting attorneys or their designees;

The State Superintendent of the West Virginia State Police or his or her designee;

One law enforcement official other than a member of the State Police;

One Child Protective Services (CPS) worker currently employed in investigating reports of child abuse or neglect;

One physician specializing in the practice of pediatric or family medicine;

One social worker who may be employed in the area of public health;

The Director of the Office of Maternal, Child, and Family Health (OMCFH) of the Department of Health and Human Resources (DHHR) or his or her designee;

One representative of the Sudden Infant Death Syndrome Program in OMCFH;

The Director of the Division of Children's Mental Health Services of the Bureau for Behavioral Health and Human Facilities or his or her designee;

The Director of the Office of Social Services in the Bureau for Children and Families or his or her designee;

The Superintendent of the Department of Education or his or her designee;

The Director of Division of Juvenile Services or his or her designee; and

The President of the West Virginia Association of School Nurses or his or her designee.

Types of Deaths Reviewed

The WVCFRP reviews all preventable death cases of any person under the age of 18. The majority of cases the panel reviews fit into the categories of accident, homicide, suicide, or undetermined. The deaths that occur attributable to natural disease typically are not selected for a panel review unless information reveals potential for the death to have been prevented.

Case Review Process

Initial screening of all fatalities is completed by the West Virginia Department of Health and Human Resources (DHHR), Bureau for Public Health (BPH), and the OCME to determine if they meet the definition of a preventable child fatality. The OCME investigators, pathologists and the WVCFRP Coordinator review all potential cases and make a determination of the child's resident status based on all the information available at the time the case is first presented to the OCME. Typically, with this method of determination, it is rare that a case be overlooked. In an attempt to combat this issue, a list of all child fatalities is obtained from the West Virginia Health Statistics Center and serves as a way to catch any child deaths that may have been missed initially.

The WVCFRP Coordinator maintains a running list of all identified child fatalities to be reviewed by the WVCFRP. The panel only reviews closed cases and does not attempt to reopen the investigation of those deaths. The WVCFRP's definition of closed cases are those where the offender is dead, has been convicted in a death, or there is a determination of no further legal action. For the reasons previously mentioned, most cases are reviewed approximately two years following the actual event.

Case reviews are conducted in confidential meetings. All panel members and invited guests are required to sign an agreement to abide by the confidentiality standards specified in the Fatality and Mortality Review Team statute.

Prior to case review by the WVCFRP, a request for records is sent to all agencies that were identified as having relevant information. The collected information typically includes demographic information, autopsy reports, criminal and civil court histories of the victim and offender, Child Protective Services (CPS) information, media reports, information regarding the use of legal or advocacy services, and the details of the incident including those occurring both prior to and following the death.

The WVCFRP members present a summary of the information collected for each case reviewed during the monthly meeting. This is followed by a panel discussion, which aims to address the following matters for each incident:

- What were the hazardous events that led up to the fatality?
- Were there any opportunities to prevent the fatality?
- Is training or education needed as it relates to specific areas or occupations?
- How does the incident relate to other reviewed incidents?

- Are there policies relevant to the incident that need to be reviewed or changed?
- Are there lessons or educational messages to be derived from this incident?

As part of the review, the WVCFRP identifies which systems, if any, the victim and/or the offender had contact with prior to, during, or after the death. This information helps the panel identify possible recommendations for improvement to system responses to incidents. This method of constructing system recommendations does not in any way have the intention to place blame on any individual or organization. To further support this objective, the recommendations made throughout the year are assembled and presented as wide-ranging proposals for systemic improvements as opposed to case specific ones. The panel believes that these recommendations can be used to improve system responses across an array of agencies and service providers to drastically reduce or eliminate preventable child deaths in West Virginia.

Findings

This report depicts the findings of the WVCFRP for calendar year 2014 preventable deaths among West Virginia children, between birth through 17 years of age, who were residents of the State at the time of their demise. In 2014, the WVCFRP had 97 recorded preventable deaths. The information housed within this report will provide insight on the reasons children are dying and also provide recommendations as to the preventative measures that can be taken to reduce this number in the future.

Demographics

Figure 1 illustrates the distribution of child deaths by age with the percentages for each group. In 2014, the majority of deaths reviewed were among infants under one year of age. Of the 97 preventable deaths reviewed by the WVCFRP, 40 were infants. An infant death is defined as the death of a child prior to their first birthday. Young children aged one to four accounted for 18 total deaths. Children aged five to nine accounted for six deaths. There were 10 deaths in adolescents aged 10 to 14. Teens aged 15 through 17 numbered 23 deaths.

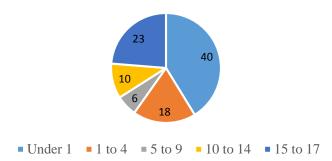
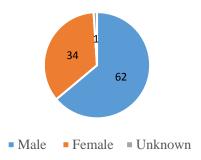


Figure 1: Total Deaths By Age Group

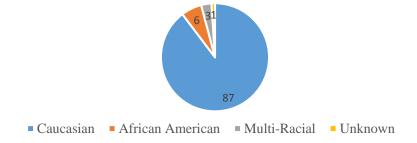
In Figure 2, the child deaths as a whole are separated out by gender. There were 62 male child deaths and 34 female child deaths that occurred. There was one death that occurred in which the gender of the child could not be determined and is accounted for in the unknown category. This difference between male and female mortality is said to occur from birth and continue throughout life. Research shows the human male is more vulnerable than the female. At the time of birth, a male newborn is said to be about four to six weeks behind a female newborn physiologically. Also, the excess of fatal accidents involving males is attributed to the fact that they have a pattern of poor motor skills and cognitive regulation, which leads to a misjudgment of risk [1].

Figure 2: Deaths By Sex



The distribution of child deaths in West Virginia as related to race is shown in Figure 3. The data show that 87 of the 97 deaths were Caucasian children. This is followed by six deaths in African American children, three deaths of children identifying with two or more races, and one child of unknown race.

Figure 3: Deaths By Race



Manner of Death

The data is broken down into five manner of death types: accident, suicide, homicide, undetermined, and pending. For 2014, two deaths were still in pending status as no cause of death has been determined to date. These categories of death result from damage involving the structure and/or function of the body initiated by an external agent or force. These causes could be due to an accident (i.e. motor vehicle, drowning, fire, etc.) or intentional (i.e. suicide or homicide). Other deaths can be ruled undetermined that could be either accidental or intentional.

The majority of preventable deaths, 45 of 97, in children from birth to age 17 were due to accidental causes shown in Figure 4. This was followed by undetermined deaths comprising 31 of 97. Suicides accounted for 13 of 97, homicide deaths were six of 97, and pending deaths made up the remaining two of 97.

Figure 4: 2014 Deaths By Manner

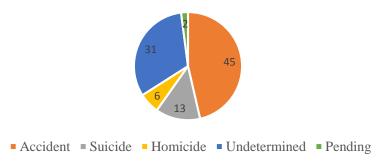


Figure 5 shows the manner of death by age group. The infants under age one comprised 25 of the 31 undetermined deaths. Overall, infants under age one had the highest number of deaths for all age groups with 40 of the 97 preventable deaths. Teens aged 15-17 had the second highest number of deaths with 23 of the 97.

50 Number of Deaths 40 30 20 0 < 1 1 to 4 5 to 9 10 to 14 15 to 17 **Age Category** ■ Accident ■ Suicide ■ Homicide ■ Undetermined ■ Pending

Figure 5: Manner of Death By Age Group

Figure 6 shows the 2014 deaths by manner of death and the gender of the child. In 2014, more male children died than female children for all causes of death. The data show males were more often the victims of homicide when compared to females. Similarly, it shows the difference in the incidence of a female completing suicide compared to a male completing suicide. For the 13 total suicides that were reported in 2014, 92% were completed by males while only 8% were completed by females. Information from the Centers for Disease Control and Prevention (CDC) states that males represent 77.9% of all suicides and males take their lives nearly four times the rate of females [2].

50 Number of Deaths 40 19 30 12 20 25 10 19 12 0 Accident Suicide Homicide Undetermined Pending Manner of Death Male ■ Female ■ Unknown

Figure 6: Deaths By Manner and Sex

Cause of Death

Each manner of death has subdivisions or categories termed causes, which give a more detailed explanation as to why the death occurred. The top three causes of death overall were unknown (undetermined), motor vehicle (accident), and third was tied with asphyxia (accident) and weapon (suicide). Unknown deaths accounted for 27 of the 97 total child deaths which is 27.8% overall. Motor vehicle deaths were responsible for 24.7% or 24 of the 97 deaths. Table 1 shows a detailed list of all preventable causes of death by manner for all age groups that occurred in 2014.

Table 1: Causes of Death By Manner and Age Group								
Manner	Cause	<1	1 to 4	5 to 9	10 to 14	15 to 17		
Accident	Motor Vehicle	1	5	3	4	11		
	Fire, Burn, or Electrocution	-	1	1	-	-		
	Drowning	-	3	1	-	1		
	Asphyxia	7	-	-	1	-		
	Fall or Crush	1	-	-	1	-		
	Poisoning, Overdose or Acute Intoxication	-	1	-	-	1		
	Unknown	1	1	-	-	-		
Suicide	Asphyxia	-	-	-	-	4		
	Weapon	-	-	-	4	4		
	Poisoning, Overdose or Acute Intoxication	-	-	-	-	1		
Homicide	Asphyxia	-	1	-	-	-		
	Weapon	3	1	-	-	-		
Undetermined	Motor Vehicle	-	-	-	-	1		
	Fire, Burn, or Electrocution	-	1	-	-	-		
	Unknown	25	4	1	-	-		
Pending		2	-	-	-	-		

Distribution of Deaths for Various Categories

Figure 7 shows all preventable deaths (non-natural) that occurred for each month in 2014. Most child deaths occurred in November, followed by September. The month with the fewest total deaths was February, which had three deaths.

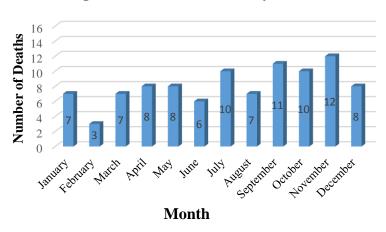


Figure 7: 2014 Child Deaths By Month

Figure 8 shows preventable causes of death by season¹. The data shows that most motor vehicle accidents occurred in fall. Also for fall, the most deaths caused by weapons occurred. Of the seven weapon related deaths that occurred, six were suicides and one was a homicide. Summer had the most drowning deaths, which is expected given that is the most popular time for children to go swimming. There was one death during the spring due to drowning. According to information from the CDC, about one in five children age 14 and younger dies from drowning each year [3]. Correspondingly, for every one child who dies from drowning, there are another five who are taken to the emergency department to receive care for non-fatal submersion injuries [3]. For 2014, there were three fire-related deaths in the state. Two of the fire deaths occurred in the fall and the additional one was during the summer.

11

¹ For the purposes of this report, the seasons are as follows: <u>Winter-Dec.</u>, Jan., Feb.; <u>Spring-Mar.</u>, Apr., May; <u>Summer-Jun.</u>, Jul., Aug.; and <u>Fall</u>-Sept., Oct., Nov.

Number of Deaths 16 14 12 10 8 6 4 2 10 9 Winter Spring Summer Fall Season ■ Motor Vehicle Fire ■ Drowning ■ Fall/Crush Asphyxia ■ Weapon ■ Poisoning/OD ■ Undetermined ■ Pending

Figure 8: Deaths By Cause Per Season

Infant Deaths

An infant death is the death of a child any time after their birth but prior to reaching their first birthday. In 2014, there were 40 preventable infant deaths reviewed by the WVCFRP. The age category with the most preventable deaths in 2014 was infants. Infant mortality is characteristically used as an indicator of overall health of a society [5].

Demographics

Figure 9 shows the infant deaths in West Virginia divided into the category of gender. It shows that 25 male infants and 14 female infants died in 2014. This displays that 61% of infant deaths were in males and 38% were in females. There was one death in an infant that occurred in which the gender could not be determined, which is reflected as the 1% unknown.

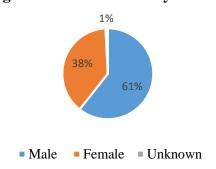
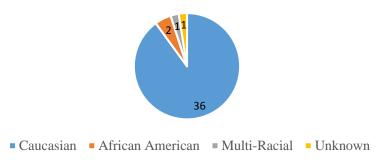


Figure 9: Infant Deaths By Gender

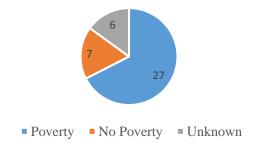
Infant deaths by race are shown in Figure 10. This figure shows that the majority of the deaths (36) occurred in Caucasian infants. There were two African American infants, one multi-racial infant, and one infant of unknown race.

Figure 10: Infant Deaths By Race



The poverty status² of infants who died of preventable deaths in West Virginia in 2014 provides a figure that indicates a possible correlation. Figure 11 shows the 40 deaths by poverty status of the parents at the time of the infant's death. There were 27 of the 40 infants who were considered to be in poverty. This accounts for 67.5% of all preventable infants deaths. In West Virginia, the infants in poverty were about two times more likely than their non-poverty counterparts to die from a preventable death. He et al. states the high infant mortality rate in the United States has some association with disparities in socioeconomic status [4]. The financial situation can affect things such as nutrition, food security, education, and healthcare [4].

Figure 11: Preventable Infant Deaths By Poverty Status



Infant deaths per age category in months are shown in Figure 12. This figure shows the number of deaths was highest in the one to two month olds. After that, the number of deaths begins to fall. There were no reported preventable deaths in nine to 11 month olds in 2014. The number of deaths continues to decrease as the age of the infant increases.

² The poverty status is determined by family receiving Medicaid at time of infant's death.

14 16 Number of Deaths 14 12 10 8 8 6 0 5-6 9-11 1-2 3 - 47-8 Months Months Months Months Months Age in Months

Figure 12: Infant Deaths By Age In Months

Manner of Death in Infants

The data on preventable death for infants is divided into four manner of death categories: accident, homicide, undetermined, and pending. There were two deaths that occurred in infants that were considered pending as no manner or cause of death has been determined to date. Figure 13 shows there were 25 deaths deemed undetermined, 10 deemed accidents, three deemed homicides and two pending.

Figure 13: Manner of Death In Infants



Figure 14 shows the manner of deaths for infants by the gender of the infant. This figure shows that overall male infants died at higher numbers than female infants. Male infants accounted for the majority of undetermined deaths. The homicides and pending deaths were all male infants. The category of accidental death is the only one in which female infants died at a higher number in 2014.

16
14
12
10
8
6
4
2
0
Accident Homicide Undetermined Pending

Manner of Death

Male Female Unknown

Figure 14: Infant Manner of Death By Gender

Causes of Death In Infants

The leading cause of preventable death in West Virginia infants in 2014 was unknown (undetermined). Most of those deaths were attributed to an unsafe sleep environment. The sleep-related deaths are coded differently than they were in the last 20-30 years. In the past, most deaths were labeled as Sudden Infant Death Syndrome (SIDS) deaths even when there was evidence of unsafe sleep; whereas now, they can be labeled differently depending on findings during investigation such as Sudden Unexplained Infant Death (SUID), undetermined/unknown cause, asphyxia, or suffocation. SUID is a general category under which all sudden unexpected deaths in infants fall, including SIDS. To further differentiate between the two terms, SUID is an infant death that does not have a specific cause but has associated risk factors that may have contributed to the death; whereas, SIDS is the cause of deaths after the autopsy, death scene investigation, and medical history rules out all other possible causes and contributing risk factors.

There were 28 sleep-related deaths that occurred in 2014 in the state. It is important to take a look at the way these deaths were recorded to better understand the information within this report. The manner of death for a majority of the sleep-related deaths (20 of 28) was accounted for in the undetermined category with the causes for those listed as 14 SUID and six undetermined/unknown. The remaining eight of 28 sleep-related deaths had the manner of death listed as accident with the cause of deaths being listed as asphyxia for four and the remaining four were suffocation.

The 28 unsafe sleep-related deaths are divided out into four main categories which are co-sleeping, unsafe sleep surface, unsafe sleep position, and unsafe bedding. Figure 15 shows this information separated out into the categories previously mentioned. It is important to mention that some of the co-sleeping deaths had other contributing factors such as unsafe sleep position and unsafe sleep surface, which are not reflected in the values shown. Co-sleeping or sharing a sleeping surface with an adult, child, or animal accounted for 19 of the 28 total sleep-related deaths. There were five deaths that were attributed solely to an unsafe sleeping position meaning the infant was not on their back. Unsafe sleeping surface was a risk factor in three of the deaths. An unsafe sleeping

surface is any surface that is not designed for an infant such as a couch. There was only one death found to be caused by unsafe bedding, meaning too many covers or blankets with the infant.



Figure 15: 2014 Unsafe Sleep-Related Deaths

Figure 16 shows the unsafe sleeping deaths by age in months. The data shows an overall downward trend in the number of unsafe sleep deaths as the infant's age increases. According to the numbers for 2014, infants ranging in age from birth to three months old were the most likely to die from unsafe sleep practices. This number reduced by almost half to five deaths in the next age category of four to five months and then reduced again to three for the six to seven month olds, and the eight to 11 month olds only had two deaths.

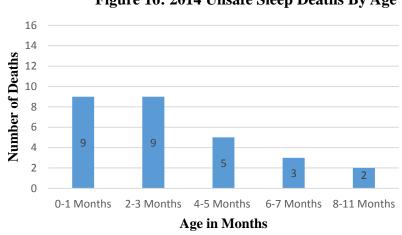
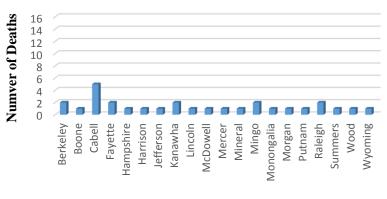


Figure 16: 2014 Unsafe Sleep Deaths By Age

Looking at the unsafe sleep deaths by county in Figure 17, the deaths took place in 20 of the 55 counties. The data show that the most unsafe sleep-related deaths occurred in Cabell County where there were five deaths in 2014. There were five other counties that had two unsafe sleep-related deaths each and the remaining 14 counties all had one death each.

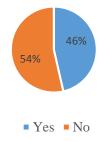
Figure 17: 2014 Unsafe Sleep-Related Deaths Per County



County of Death

Another interesting statistic is the second hand smoke exposure in the unsafe sleep-related deaths as smoking is also a risk factor in SUID deaths. Figure 18 shows that 46% or 13 of the 28 infants who died were exposed to secondhand smoke. This is an important risk to consider as the CDC states infants who are exposed to secondhand smoke after birth are at a greater risk for sudden, unexplained death because the chemicals in secondhand smoke appear to affect the brain in ways that interfere with the regulation of the infants' breathing [5].

Figure 18: Second Hand Smoke Exposure In Sleep Related Deaths

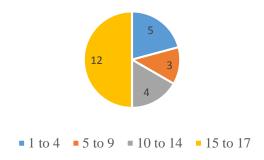


Motor Vehicle Deaths

Motor vehicle accidents were the leading preventable cause of death in West Virginia children ages one though 17 for 2014. In the United States, motor vehicle injuries were also the leading cause of death. The CDC reported that during 2014, 602 children ages 12 years and younger died as occupants in motor vehicle accidents [6]. They also found that of the children 12 years and younger who died, 34% were not restrained [6]. The CDC reports that for teens aged 16-19, 2,270 were killed in 2014 in motor vehicle accidents [6]. This information shows that about six teens died every day from injuries sustained in motor vehicle accidents [6].

In 2014, a total of 24 children ages one to 17 died in West Virginia as a result of a motor vehicle accident either as the driver, passenger, or pedestrian. Figure 19 shows the deaths by the age categories. This clearly shows that exactly half (12 of 24) of the motor vehicle accident deaths that were reviewed occurred in teens aged 15-17. This was followed by children aged one to four with five deaths, children aged 10-14 with four deaths, and children aged five to nine with three deaths. The data follow the statistics regarding motor vehicle accidents, which state that the risk of motor vehicle crashes is higher among 16-19 year olds than amongst any other age group [7]. Within that age group, 16-17 year olds are almost twice as likely as 18-19 year olds to be involved in an accident [7].

Figure 19: 2014 Motor Vehicle Deaths By Age



The number of deaths by gender and age category is shown in Figure 20. For teens aged 15-17, there were an equal number of deaths in both males and females. In children aged 10-14, males outnumbered females and for the one to four year olds and five to nine year olds, females outnumbered males.

and Gender

16

11

6 6

2 3 1 2 3 1

1 to 4 5 to 9 10 to 14 15 to 17

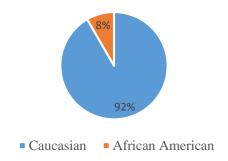
Age Categories

Male Female

Figure 20: 2014 Motor Vehicle Deaths By Age

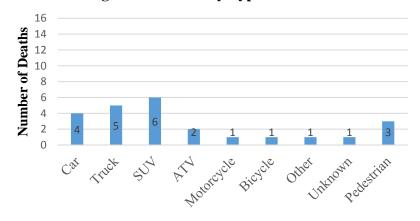
Regarding the motor vehicle deaths by race in Figure 21, Caucasian children represent 92% of the children that died in motor vehicle accidents in 2014. There were 22 Caucasian children and two African American children who died.

Figure 21: 2014 Motor Vehicle Deaths By Race



The breakdown of motor vehicle deaths by type of vehicle involved is presented in Figure 22. Six deaths involved an SUV, followed by five deaths involving a truck and four deaths involving a car. About one quarter (25%) of fatalities involved an SUV, followed by 21% involving a truck, and 17% involving a car. In 2014, only two child deaths involved an all-terrain vehicle (ATV). There were also three incidents in which the child was a pedestrian at the time of their death and the vehicles which caused those fatalities were two SUVs and one van.

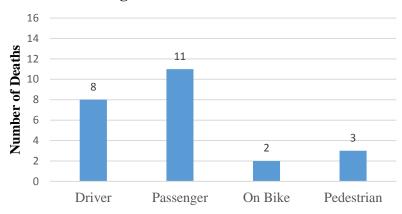
Figure 22: Death By Type of Vehicle



Type of Vehicle

Figure 23 shows the majority of children who died were passengers at the time of their death, which includes three front seat passengers, five backseat passengers, one in the bed of a truck, and two passengers of unknown position prior to the accident leading to their death. There were eight children driving at the time of their death followed by three pedestrians and two who were on a bike. The two on bikes included one child on a motorcycle and one child on a bicycle.

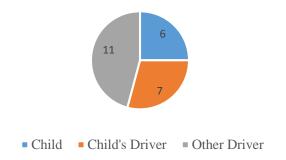
Figure 23: Position of Child



Child's Position at Time of Death

Figure 24 shows the party responsible for causing the motor vehicle accident that resulted in the death of a child. The figure shows that almost half of the deaths (11 of 24) were caused by another driver. There were six deaths in which the accident was caused by the child driving and seven deaths were caused by the child's driver.

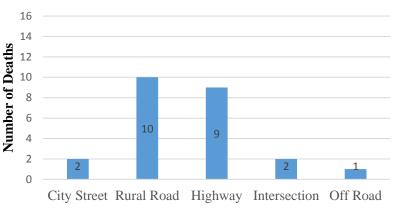
Figure 24: Person Responsible for Accident



Of the deaths that were caused by the child's driver, three were the biological parent of the child, one was the stepparent of the child, two were friends of the child, and one was the boyfriend of the child.

Figure 25 contains the locations in which the fatal incidents occurred. In 2014, the fatal incidents only occurred in five different locations. The majority of the motor vehicle accidents (42%) occurred on rural roads, which was followed by 38% occurring on the highway. Rural roads accounted for 10 deaths and highways accounted for nine deaths. As the figure shows, these two locations drastically outnumbered the other locations. There were two deaths each for city streets and intersections and only one death occurred off road.

Figure 25: Location of Incident



Incident Location

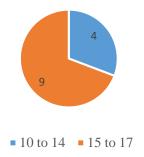
With motor vehicle accidents accounting for 24 childhood deaths in West Virginia for 2014, it is important to look at some of the risk factors the fatalities shared. Speeding was a contributing factor in eight of the accidents and recklessness was a contributing factor in seven of the accidents. Driving while under the influence of drugs or alcohol was a factor in two of the accidents, one in which a child was the driver and another in which a biological parent was the driver. When looking at safety measures, there were seven accidents in which a seatbelt was present but was not used and two accidents where a child safety seat was needed but not present. Also, in the two incidents involving ATVs, and the one accident involving the motorcycle, the child was not wearing a helmet.

Suicide Deaths

Suicide was the second most common cause of preventable childhood death for West Virginia in 2014. Across the nation, suicide was the second leading cause of death for ages 10-24 [8]. The suicide deaths of children reviewed by the WVCFRP in West Virginia were comprised of teens ranging in age from 13 through 17 years old. In the United States in 2014, one child committed suicide every one hour and 35 minutes on average [9]. Data also indicate that for every successful suicide, there were 25 attempts [9]. Overall, females were three times more likely than males to attempt suicide; however, males were four times more likely to die by suicide [10].

In West Virginia, 13 children completed suicide in 2014. Figure 26 shows the suicides divided into two different age categories. Even though it was previously stated that no child younger than 13 completed suicide, the age categories shown here follow the same age categories used throughout the rest of the report. These data show that a majority of the suicide deaths (nine of 13) occurred in teens aged 15-17. There were four suicides that occurred in children aged 10-14.

Figure 26: Suicide Deaths By Age



Looking at the deaths by gender in Figure 27, the majority of the deaths occurred in males. These data follow the national trend that males die by suicide more often than females. In 2014, 12 males completed suicide compared to only one female. When looking at suicides by race, all 13 suicides were completed by Caucasians.

Figure 27: Suicide Deaths By Gender

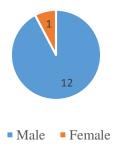


Figure 28 shows the suicide deaths by cause. There were 61% of the suicides completed by using a weapon. In all eight deaths, the weapon used was a firearm. Nationwide, firearm deaths account for 50% of all suicides [10]. There were 31% of suicide deaths caused by asphyxia, which were all hanging deaths and the remaining 8% were overdose deaths.

Figure 28: Suicide Deaths By Cause

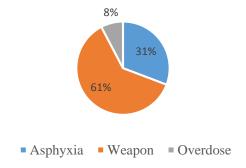


Figure 29 shows suicide deaths by cause separated into age categories. This information shows which types of death were most common for each group. The data show that in 2014, all children in the 10-14 age range who completed suicide did so by weapon. The information also shows that all asphyxia/hanging deaths were completed by 15-17 year olds. One overdose that occurred was within that age category as well.

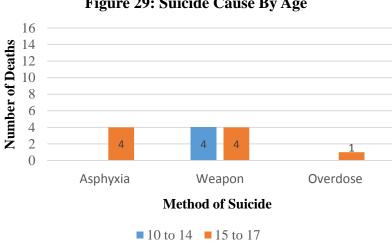


Figure 29: Suicide Cause By Age

Figure 30 shows that a belt was the most commonly used object for the four asphyxia deaths. Half of the suicide deaths were completed using a belt followed by one quarter using a rope and the other quarter using a scarf. All asphyxia deaths that occurred were completed by males.



Figure 30: Object Used For Strangulation

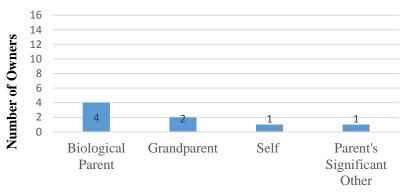
The firearm deaths that occurred can be broken out by the type of firearm used in the suicide. Figure 31 shows a majority of the firearm deaths (five of eight) was carried out using a handgun. The shotgun, hunting rifle, and assault rifle type of firearms were each only used in one suicide. Of the eight total firearm deaths, one of the suicides was completed by a female. This is important to note as most people have a common misconception that females do not use firearms as a means to complete suicide.

Figure 31: Type of Firearm Used in Suicides



Figure 32 shows the owner of the fatal firearm used by the child. This information shows that half of the firearms were owned by the biological parent of the child. In two deaths, the fatal firearm was owned by the grandparent. There was one death in which the child was the owner of the firearm and another death in which the mother's boyfriend was the owner.

Figure 32: Owner of Firearm Used in Suicide



Firearm Owner

The common factor in a majority of the firearm deaths was that little to no safety features were used. Table 2 shows this information and displays whether the safety feature was used (yes) or not (no) in each of the eight firearm deaths.

Table 2: Firearm Safety Features					
	Yes	No			
Trigger Lock	0	8			
External Safety	1	7			
Loaded Chamber	0	8			
Indicator					
Magazine Disconnect	0	8			
Minimum Pull Trigger	0	8			
Locked Storage Cabinet	3	5			
Stored With Ammunition	3	5			
Stored Loaded	4	4			

Looking at suicide deaths overall, there were common risk factors involved in the deaths, which could be used in the future to try to prevent other suicides from occurring. It is important to keep in mind that there could be multiple risk factors for each case so these numbers will add up to more than 13. Considering the child's history, there were five children with a history of substance abuse and one who was drug/alcohol impaired at the time of the incident. Three children had a criminal history or delinquency and there was one child who was known to be having sexual orientation issues. Another factor examined was CPS involvement. There were four children who had evidence of prior abuse, three children had a history of maltreatment as the victim, and one child had an open CPS case at the time of death. When focusing on the circumstances that occurred prior to the death, four cases found the child had made prior suicide threats and three cases involved the child talking about suicide. Mental health issues were another important topic of focus. There were four cases in which the child had received prior mental health services, two children were receiving mental health services at the time of death, and three children were on medications for mental illness at the time of their death. Family discord, divorce, breakups, or arguments were known to occur in eight deaths. Issues with school (i.e. bullying, new school, and/or failure) were recorded in four cases.

WVCFRP Recommendations Based on 2014 Data Review

Infant Deaths

- 1. Recommend expanding the current Safe Sleep Campaign to include an emphasis on always keeping the child in their own crib, alone, and on their backs. Increase education to parents, providers, and social service providers so anyone around an infant knows the current safe sleep information. Ensure that the hazards associated with co-sleeping are well known. Also, make it a point to let parents know that it CAN happen to them even if they only plan to co-sleep one time.
- 2. Recommend a ban on the sale of bumper pads in the state.
- 3. Recommend enactment of felony legislation for anyone who causes the death of their child while under the influence of substances. This could be verified by requiring an instant drug screen to all parents during the child death scene investigation.

Substance Abuse

- 1. Recommend changing the current Child Protective Services (CPS) screening policy on drugs to include drugs that are prescribed to the parent if levels are found to be above the therapeutic range.
- 2. Recommend changing the current CPS policy so a baby does not have to be a Neonatal Abstinence Syndrome (NAS) baby to have a case opened. Any positive drug screen should result in an intake.
- 3. Recommend initiation of a requirement for hospitals to notify CPS when a child is born to a mother who has had a positive drug screen. With this, make sure hospitals are aware of pregnant women with a history of drug abuse.
- 4. Recommend reinforcing the importance of prenatal care to expectant mothers. Include in the education the importance of abstaining from drug, tobacco, and alcohol use during pregnancy. Reinforce the dangers of using these substances during pregnancy.
- 5. Recommend instituting provider education to school personnel on overdose and the trauma caused to the children who witness it. Make sure there is full utilization of the Handle with Care Program.
- 6. Recommend implementation of additional plans on disposal of medications found in the homes.

Automobile Safety

- 1. Recommend increasing safe driving education within school systems for children. Include seatbelt safety and the importance of always using a seatbelt.
- 2. Recommend creating an updated safe driving video including the newer hazards that face teen drivers. Include some real life stories to make the video more real for teens.
- 3. Recommend increasing car seat education programs to make sure parents know the correct size for the child, proper installation, and proper placement in the car.
- 4. Recommend that the Don't Drink and Drive Campaign be expanded to Driving Under the Influence, which would also include substance abuse. Utilize the "Stay Alive-Just Drive" video distributed by the DHHR and Emergency Medical Services for Children.
- 5. Recommend amendments to "Andrea's Law" to make it stronger.

Suicide Prevention

- 1. Recommend increasing the amount of child suicide prevention education. Suicide prevention in the school systems needs to increase to include creation of fact sheets about what to look for in kids regarding suicide risk. This should be available to everyone, especially parents, educators, and anyone who is in close contact with children.
- 2. Recommend implementation of an anti-bullying campaign. This needs to include providing support against the stigma/bias against LGBTQ persons.
- 3. Recommend increasing education on symptoms of depression and drug use, which are correlated with suicide risk.
- 4. Recommend increasing training for the parental monitoring of social media. Make sure that everyone is aware that any suicidal ideation should be reported to a trusted adult. Get the available options out to people so that they can help the child seek therapy or therapeutic medication.

Fire Safety

- 1. Recommend increasing fire safety prevention and education to school aged children.
- 2. Recommend a campaign to make the public aware of the free smoke detectors that are available through the West Virginia Fire Marshal.

Water Safety

- 1. Recommend enhancing the message to parents and other adults regarding leaving children unattended near water, including the bathtub.
- 2. Recommend program to increase awareness of the importance of using life vests. Also, advise children that if they do not know how to swim, they should not horseplay around the water.

ATV Safety

- 1. Recommend an amendment of the current legislation to add side by sides to the current ATV legislation.
- 2. Recommend increased dissemination of information on the importance of wearing a helmet and not driving on paved roads.
- 3. Recommend a required license for an ATV and a required operator's course, and make stricter age restrictions.

Hunting Safety

- 1. Recommend additional hunting education campaigns and ensure that it is created to reach the target population.
- 2. Recommend legislative prohibition on gun purchases for children and increase the importance of keeping guns in a locked safe.

CPS Recommendations

- 1. Recommend a shift to make CPS behavioral based instead of compliance based because compliance does not guarantee changed behavior.
- 2. Recommend creation of a poster project to remind providers of their mandated reporting status.
- 3. Recommend changing the intake process to ensure that multiple people look at an incident report as they come in instead of leaving it up to one person. The more eyes that see the incident, the more likely it is that a case will not be overlooked.
- 4. Recommend improving the practice of screening in/out referrals. Possibly implement a rule that on the third referral, a case is opened for investigation.
- 5. Recommend CPS assessment of every household that is investigated with a 0-1 year old.

Miscellaneous

- 1. Recommend creating a campaign to teach CPR to all parents before they leave the hospital.
- 2. Recommend expanding services of free counseling/bereavement counseling to those in need after the death of a child.
- 3. Recommend linking the Child Abuse Registry, Vital Statistics, and Health Care Providers information to ensure that if there is a pregnancy in someone known to be a child abuse offender, all are notified to watch for the baby to be born and notify CPS.

References

- 1. Kraemer, S. (2000). The fragile male. BMJ: British Medical Journal, 321(7276), 1609–1612.
- 2. Centers for Disease Control and Prevention (CDC). Web-based Injury Statistics Query and Reporting System (WISQARS) [Online]. (2016, 2014) National Center for Injury Prevention and Control, CDC (producer). Available from https://www.cdc.gov/violenceprevention/pdf/suicide-datasheet-a.pdf
- 3. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. Available from: https://www.cdc.gov/homeandrecreationalsafety/water-safety/waterinjuries-factsheet.html
- 4. He, X., Akil, L., Aker, W. G., Hwang, H.-M., & Ahmad, H. A. (2015). Trends in Infant Mortality in United States: A Brief Study of the Southeastern States from 2005–2009. International Journal of Environmental Research and Public Health, 12(5), 4908–4920. http://doi.org/10.3390/ijerph120504908
- 5. Blencowe H, Cousens S, Oestergaard M, Chou D, Moller AB, Narwal R, Adler A, Garcia CV, Rohde S, Say L, Lawn JE. National, regional and worldwide estimates of preterm birth. The Lancet, June 2012. 9;379(9832):2162-72 Barton L, Hodgman JE, Pavlova Z. Causes of death in the extremely low birth weight infant. *Pediatrics*. 1999 Feb. 103(2):446-51.
- 6. Centers for Disease Control and Prevention. Web-based Injury Statistics Query and Reporting System (WISQARS) [Online]. (2014). National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (producer). [Cited 2016 Sept 20].
- 7. Insurance Institute for Highway Safety (IIHS). Fatality facts: teenagers 2014. Arlington (VA): The Institute; 2014 [cited 2016 Sept 20]. http://www.iihs.org/iihs/topics/t/teenagers/fatalityfacts/teenagers
- 8. American Foundation for Suicide Prevention. Suicide Statistics. Accessed online at www.afsp.org
- 9. World Health Organization. Suicide Data. Accessed online at www.who.int
- 10. American Association of Suicidology. National Facts and Statistics. Accessed online at www.suicidology.org