West Virginia
Fatality and Mortality Review Team

Annual Report 2021

Child Fatality Review Panel CY 2017

Domestic Violence Fatality Review Panel CY 2016

Infant and Maternal Mortality Review Panel
Maternal Deaths CY 2016-2017 & Infant Deaths CY 2015

Unintentional Pharmaceutical Drug Overdose Review Panel

December 1, 2022

WEST VIRGINIA Department of Health & Human Resources
BUREAU FOR PUBLIC HEALTH

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West Virginia Fatality and Mortality Review Team
Annual Report 2021

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The following report is filed in compliance with W. Va. Code §61-12A-1, *et seq*., known as the Fatality and Mortality Review Team which is created under the West Virginia Department of Health and Human Resources, Bureau for Public Health.

All individuals listed were in office at time of report distribution.

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INTRODUCTION

The following report is filed in compliance with W. Va. Code §61-12A-1, *et seq*., by the Fatality and Mortality Review Team (FMRT) of the West Virginia Department of Health and Human Resources (DHHR), Bureau for Public Health.

W. Va. Code §61-12A-1, *et seq.* establishes standard procedures for the formation and conduction of business of the FMRT. The FMRT is a multidisciplinary team created to oversee and coordinate the examination, review, and assessment of special cases of death where other than natural causes are suspected.

The FMRT consists of four members which includes DHHR's Chief Medical Examiner (chairperson), DHHR's Commissioner of the Bureau for Public Health (or designee), Superintendent of the West Virginia State Police (or designee) and a prosecuting attorney appointed by the Governor. To carry out the purpose of the team, four Advisory Panels were established and set up as follows:

- A Child Fatality Review Panel (CFRP) created to examine, analyze, and review deaths of children under the age of 18 years;
- A Domestic Violence Fatality Review Panel (DVFRP) created to examine, analyze, and review deaths resulting from suspected domestic violence;
- An Infant and Maternal Mortality Review Panel (IMMRP) created to examine, analyze, and review the deaths of infants and women who die during pregnancy, at the time of birth or within one year of the birth of a child; and
- An Unintentional Pharmaceutical Drug Overdose Review Panel (UPDORP) created to examine, analyze, and review deaths from unintentional prescription or pharmaceutical drug overdoses.

The FMRT is required to submit an annual report to the Governor and to the Legislative Oversight Committee on Health and Human Resources Accountability concerning its activities and the activities of the Advisory Panels including statistical information concerning cases reviewed during the year, trends and patterns concerning these cases and the panel's recommendations to reduce the number of fatalities and mortalities that occur in West Virginia.

Cases subject to review by the panels are prepared for review at different points in time. Each of the review panels has different timelines, caseloads, investigative approaches and processes that comprise the panel work. As such, the panels are currently working on different schedules and calendar year reviews.

This report embodies the findings of the CFRP for the calendar year 2017 which may differ from information reported by DHHR's West Virginia Health Statistics Center and DVFRP for calendar year 2016. The IMMRP data reporting includes maternal deaths for 2016-2017 and infant deaths for 2015. At the time of this report, UPDORP has not been activated.

CHILD FATALITY REVIEW PANEL

Overview

The CFRP is responsible for reviewing the facts and circumstances surrounding deaths of all children, under the age of 18, who were residents of the State of West Virginia at the time of their death.

The CFRP 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 CFRP 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. CFRP recommendations are designed to make the needed changes in actions and policies to protect children, while holding perpetrators responsible for their actions, and reducing the overall number of child fatalities that occur in the state.

Membership

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

- Two prosecuting attorneys or their designees;
- 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;
- Director of the Office of Maternal, Child, and Family Health (OMCFH) of DHHR's Bureau for Public Health or his or her designee;
- One representative of the Sudden Infant Death Syndrome Program in OMCFH;
- Director of the Division of Children's Mental Health Services of DHHR's Bureau for Behavioral Health or his or her designee;
- Director of the Office of Social Services in DHHR's Bureau for Children and Families [now Bureau for Social Services] or his or her designee
- Superintendent of the West Virginia Department of Education or his or her designee;
- Director of Division of Juvenile Services or his or her designee; and
- President of the West Virginia Association of School Nurses or his or her designee.

Types of Deaths Reviewed

The CFRP 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 DHHR's Bureau for Public Health (BPH) and OCME to determine if they meet the definition of a preventable child fatality. OCME investigators, pathologists, and CFRP 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 CFRP Coordinator maintains a running list of all identified child fatalities to be reviewed by the panel. The panel only reviews closed cases and does not attempt to reopen the investigation of those deaths. The CFRP'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 FMRT statute.

Prior to case review by the CFRP, 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, 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 CFRP 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, CFRP identifies which systems, if any, the victim or the offender, or both, 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.

A Note About COVID-19

In late 2019, the world began confronting a global pandemic. The novel coronavirus, SARS-CoV-2, better known as COVID-19 has impacted almost every facet of society worldwide. This respiratory virus caused disruption in work for the Fatality Review Panels and removed the ability of the CFRP to meet in person. This decision was made in accordance with Governor Jim Justice's directives to better protect health and mitigate the spread of a novel virus while public health experts developed knowledge and mitigation strategies. CFRP in-person meetings ceased after March 2020 and have remained suspended since, adding challenges to the completion of the 2017 case review process. With some members of the review panel in quarantine, others working from home, and others in the office, challenges of information, communication, and workflow had to be overcome for report completion.

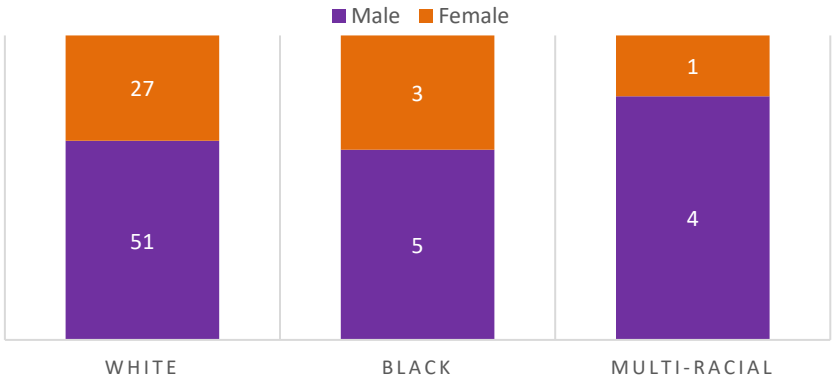
For the 2017 report, at the time of suspension of the in-person meetings, the CFRP had nine remaining child death cases to review. In order to meet the reporting requirements, the CFRP epidemiologist compiled all of the remaining case files and information that would have normally been reviewed during the monthly meetings into a presentation which was then shared with the panel via secure email along with a few open-ended questions for each panel member to respond to. The responses were compiled, reviewed, and added to the notes from previous reviews. This partial-review process, while not ideal, allowed for the final compilation of 2017 data and statistics included in this report.

Findings

In 2017, there were 129 children who died in West Virginia. Out of those 129 deaths, 101 were reviewed by the Child Fatality Review Panel (CFRP), and nine of those cases were ruled out (based on the criteria described above) by the review panel. The remaining 92 child deaths form the basis for the calendar year 2017 report.

The demographic breakdown of those 92 deaths is illustrated in Figure 1 where race and sex are quantified.

Figure 1 Death By Sex and Race

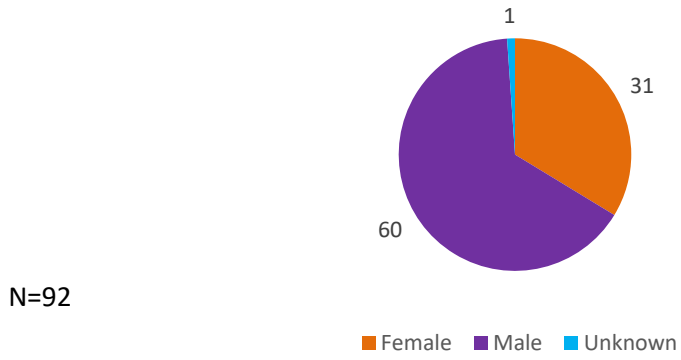


N=91 (1 case of undetermined sex)

As depicted in Figure 2, a total of 60 or 65.2% of the reviewed cases are male, 31 or 33.7% are female, with one case having an unknown sex. The breakdown of race indicates that 78 or 84.8% of the decedents were white; black or African American accounted for 8 or 8.7% of the decedents, and the multi-racial category (defined as a child of two or more races) contains 5 or 5.4% of the decedents. Because of the challenges associated with determining Hispanic or non-Hispanic, this category was not applied to this report. There were also no Latino, Asian, or Native American cases reviewed for 2017. This race breakdown is not surprising as 93.5% of all West Virginians

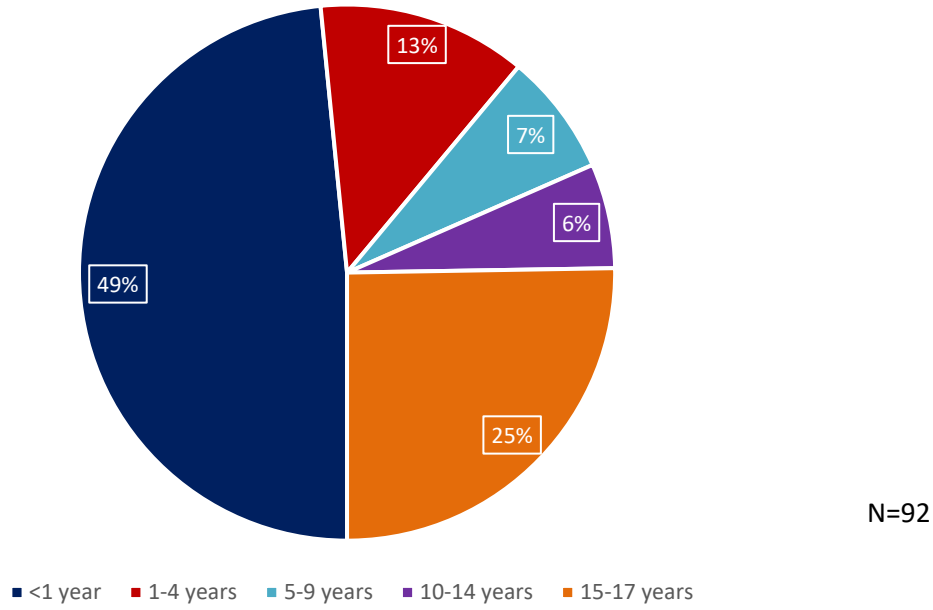
are white, 3.6% are black or African American, and less than 1% for all other races per the United States Census Bureau's Quick Facts data from 2019[1] (2017 data unavailable).

Figure 2 Sex of Decedents



The distribution of child death ages is illustrated in Figure 3. Upon review, children <1 year old comprise the majority of deaths at a total of 35 or 38%, 1–4-year-old children account for 12 or 13%, 5—9-year-old children comprise a total of 7 or 7.6%, 10—14-year-old children a total of 6 or 6.5%, and 15—17-year-old children account for 24 or 26.1%.

Figure 3 Death by Age Groups

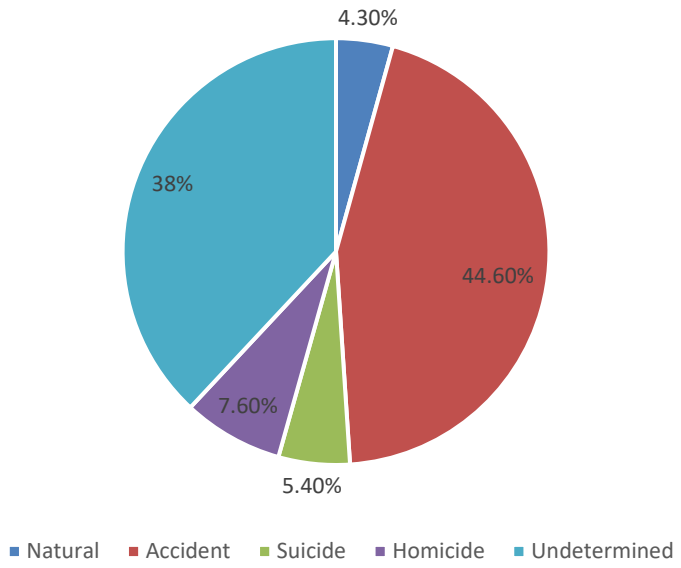


The manner of death, as depicted in Figure 4, has five possible categories: Natural, Accident, Suicide, Homicide, and Undetermined. Accidents make up the majority at 44.6%, Undetermined is next at 38%, followed by Homicide at 7.6%, Suicide at 5.4%, and Natural at 4.3%.

Where "Natural" is listed as a manner of death, the cases were reviewed due to the death being deemed preventable by the CFRP. The multidisciplinary members of the CFRP do not always agree with the manner of death as listed on the death certificate by the certifying physician. The

CFRP also reviews cause of death statements recorded on the death certificate and that analysis, using the different perspectives that the review team has, helps to determine if what is called a natural death could have been preventable.

Figure 4 Manner of Death



When cause of death is determined, it provides a clearer picture of how a person died beyond the narrow categorization of manner. Table 1 illustrates the specific cause of death by age for the cases reviewed. Logically, certain age groups are more likely to trend in certain directions. For example, it would be rare to see child under 3 complete suicide or a 15-year-old perish from sleep-related hazards like co-sleeping. The most common cause of death in each age group are as follows: <1 undetermined, 1-4 Motor Vehicle Accident, 5-9 Motor Vehicle Accident, 10-14 Motor Vehicle Accident, 15-17 Motor Vehicle Accident.

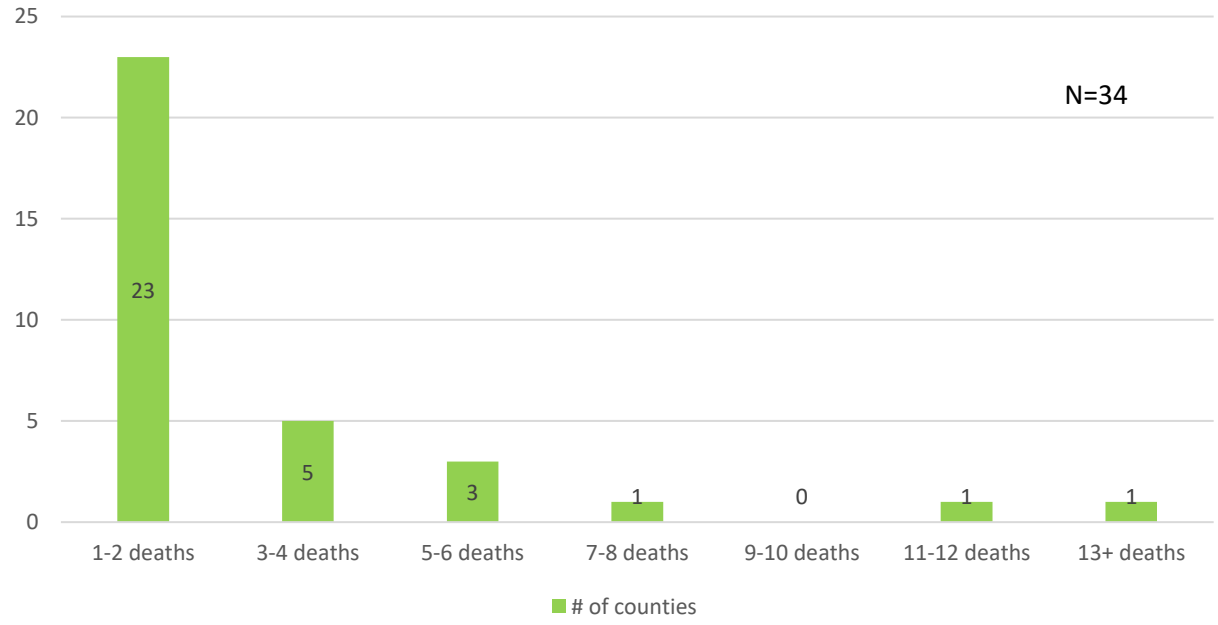
Table 1 Cause of Death in Each Age Group

		Age Group					
Manner	Cause	<1	1-4	5-9	10-14	15-17	Total
Natural	Prematurity	1	-	-	-	-	1
	Other Infection	1	-	-	-	-	1
	Other Medical Condition	-	-	-	-	2	2
							Subtotal: 4
Accident	Any Medical Cause	1	-	-	-	-	1
	Motor Vehicle	-	4	4	3	14	25
	Fire/Burn	-	1	1	-	-	2
	Drowning	-	2	-	1	1	4
	Unintentional Asphyxia	3	2	-	-	-	5
	Poisoning/Acute Intoxication/Overdose	-	-	-	1	1	2
	Other Injury	-	1	-	-	-	1
	Unknown	1	-	-	-	-	1
							Subtotal: 41

Table 1 Cause of Death in Each Age Group							
		Age Group					
Manner	Cause	<1	1-4	5-9	10-14	15-17	Total
Suicide	Self-Inflicted Gunshot Wound	-	-	-	-	3	3
	Asphyxia due to Hanging	-	-	-	-	2	2
						Subtotal: 5	
Homicide	Motor Vehicle	-	-	-	-	1	1
	Abuse/Assault	1	1	-	-	-	2
	Fire	-	1	1	-	-	2
	Gunshot Wound	-	-	1	-	-	1
	Acute Intoxication	1	-	-	-	-	1
						Subtotal: 7	
Undetermined	Medical Cause	1	-	-	-	-	1
	Unknown	32	2	-	-	-	34
						Subtotal: 35	

Over 60% of counties in West Virginia had at least one child death in 2017. The distribution of the number of deaths per county is represented in Figure 5. Over half the counties in West Virginia had a preventable child death, illustrating a true problem for all West Virginians.

Figure 5 Number of Deaths per County



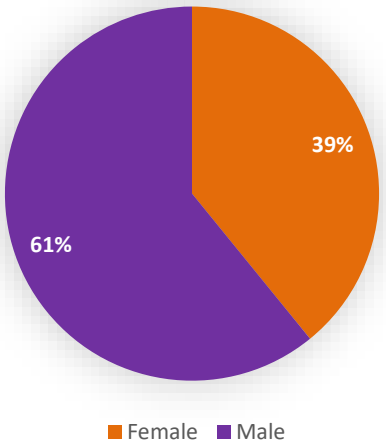
Largest Cause of Death in Infants

Children under the age of 1 year, infants, make up the large majority of the 2017 cases. The large number, combined with the fact that this age group is at their most vulnerable, resulted in the CFRP taking a deeper look at this segment of cases that were reviewed.

The most common manner for infant death in 2017 in West Virginia was the undetermined/unknown category, followed by unintentional asphyxia. While many of these deaths

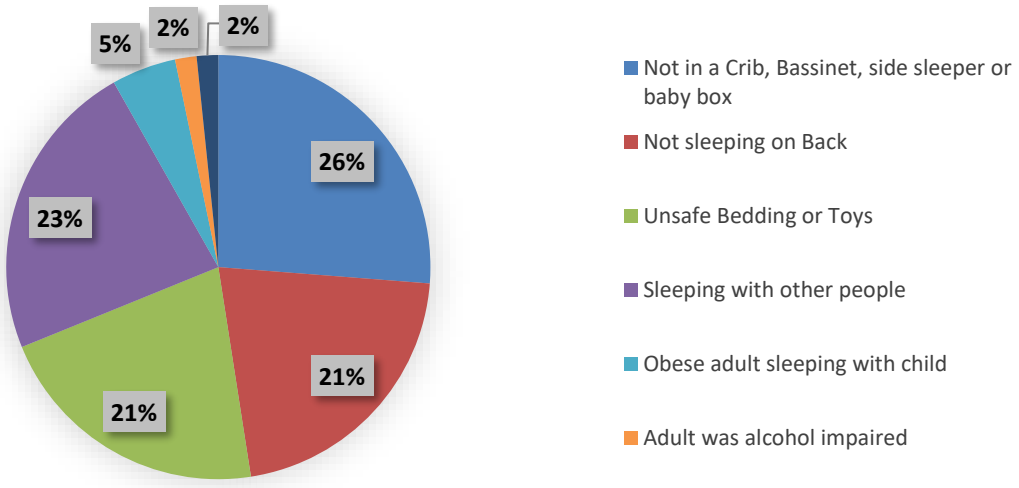
are categorized as undetermined, 22 of them were sleep related and/or had exposure to sleep-related hazards. Figure 6 illustrates the breakdown of sleep-related deaths by sex.

Figure 6 Sleep-Related Deaths by Sex



There are many factors that contribute to unsafe sleep. Figure 7 depicts some contributing unsafe sleep hazards and how common they were in the reviewed cases. The largest factor overall in unsafe sleep was that the infant was not in a crib, bassinet, side sleeper, or baby box. The American Academy of Pediatrics (AAP) recommends babies under age 1 be put to sleep on a firm sleep surface, with a fitted sheet and with no extraneous items including blankets or pillows. The definition of a firm sleep surface is a crib, bassinet, portable crib, or play yard that conforms to the safety standards of the Consumer Product Safety Commission (CPSC).[2] The AAP states that a safe sleep environment can reduce the risk of all sleep-related infant deaths.[2] A safe sleep environment has all of the following elements: using a firm sleep surface, placing babies on their back for sleep, having the baby sleep in the same room close to the parents/caretaker's bed but on their own sleep surface, having no bedding or loose objects in the infant's sleep area, considering use of a pacifier at bed time, and avoiding smoke exposure during pregnancy and after birth.[2] Had all these elements been used for these infants, the number of deaths due to sleeping hazards would likely have been much smaller.

Figure 7 Unsafe Sleep Hazards



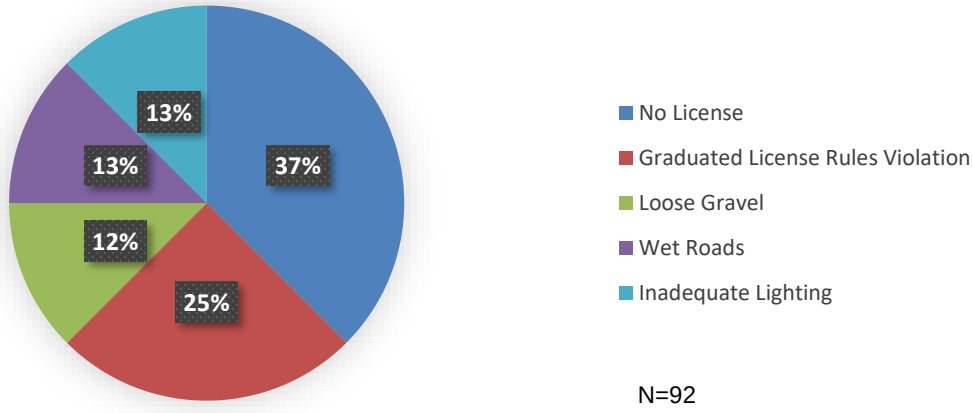
N=92

Largest Cause of Death in Late Teens

The next largest age group are teens aged 15-17. The most common manner of death was accident, and the most common cause of death was due to motor vehicle crashes. Vehicle crashes involving teens at this age group are not uncommon nationally; therefore, the number of cases in this category was not surprising to the panel. This age range is when teens are obtaining licenses and permits to start driving, or their friends are driving them with a new license as a natural progression towards adulthood. The concern is that what should be a new chapter in a teen's life is ending in tragedy for too many.

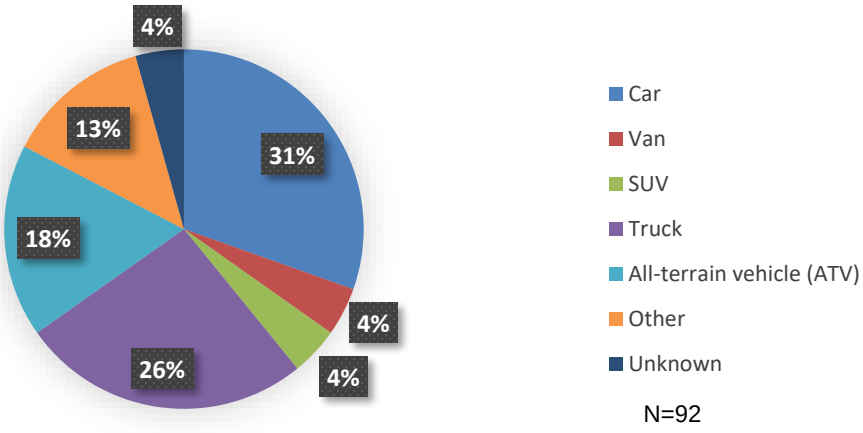
Figure 8 displays the risk factors that were associated in these motor vehicle related deaths. In many of the deaths the child was the driver and reported as "at fault" for causing the accident. An encouraging statistic from the reviewed cases is that none of the drivers were found to be impaired at the time of the fatal accident; however, it is discouraging to find that many had no license or were violating graduated licensing rules at the time of the crash.

Figure 8 Driving Hazards



According to the Centers for Disease Control and Prevention (CDC), newly licensed teens (at age 16) are more likely to be in a crash than their 18-19-year-old counterparts.[3] In reviewing the types of vehicles involved, Figure 9 illustrates that the majority of vehicles involved were cars or trucks, with all-terrain vehicles (ATVs) having the third highest frequency. Safer practice with ATVs along with more careful driving in an average car and truck has the potential to greatly reduce the number of preventable motor vehicle fatalities.

Figure 9 Motor Vehicles Involved in Deaths



Accidents in All Age Groups

While the phrase “accidents happen” is common vernacular, it does not make these deaths any less tragic or any less preventable. Sometimes an accident is just that – an improbable chance that an event will occur. In reviewing deaths, CFRP classified them as preventable deaths for purposes of this report. Some were specifically addressed above, such as motor vehicle accidents, and unintentional asphyxia due to unsafe sleep. The remaining categories of cause of death are previously shown in Table 1. Motor vehicle deaths make up the large majority of the cause for accidental deaths across all of the age ranges, perhaps indicating that it may not just be teens who need to drive safer, but every person in West Virginia. Drowning, fire, and acute intoxication/overdose/poisoning deaths make up the next most common cause and are often not in the forefront of public awareness. Proper water safety, fire safety, and keeping hazardous items and materials away from children will be efforts that pay dividends in helping to prevent these types of deaths. The AAP and CDC have noted what these safety measures can look like and strategies for implementation. The fewest number of accidental deaths in the cases reviewed fall into the medical, other injuries, or unknown cause categories, with a total of three deaths.

Remaining Cause and Manner of Deaths

There are several death categories and age groups which are not in the majority; however, they are no less tragic. Suicide, homicide, and natural causes are the remaining manner categories not yet discussed. Suicides were exclusive to the 15-17 age group and the cause of death for all was either from asphyxia due to hanging or by a self-inflicted gunshot wound. Self-inflicted gunshot wounds made up three of the five suicide deaths and each of the victims was a white male child.

Homicide deaths in children extended across a more varied age range in the cases reviewed for 2017. There were two homicide deaths in each of the age groups <1, 1-4, and 5-9. There were no homicides that occurred in age group 10-14 and one homicide that occurred in age group 15-17. The cause of death categories were also varied, with the most common being fire with two deaths followed by: gunshot wound (1 death), assault (1 death), abuse (1 death), hit by vehicle (1 death), and poisoning/acute intoxication (1 death). Table 1 illustrates the breakdown of homicides and age groups further.

The final manner of death is the natural category. Natural deaths were exclusively in age groups <1 and 15--17, with two deaths in each age group. The cause of death for the reviewed cases were 1) prematurity and 2) other infection for the <1 age group, while both cases were categorized under other medical condition for 15-17 age group. While these cases fell into the natural manner and natural cause categories, the review panel included these cases in the review due to the fact that there is evidence that the deaths may have been preventable.

Recommendations Based on 2017 Data Review

Note: Due to the retrospective nature of the CFRP, some of the recommendations listed may already be in the implementation process at time of report dissemination.

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 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 a child while under the influence of substances. This could be verified by requiring a drug screen to all parents/caregivers as a part of the child death scene investigation.

Substance Use Disorder (SUD) in Parents/Caregivers

1. Recommend expanding the current CPS policy so that any infant who tests positive for drugs at time of birth should result in CPS opening a case. This is currently only the protocol for infants born and diagnosed with neonatal abstinence syndrome (NAS).
2. Recommend initiation of a requirement for hospitals/birth centers to notify CPS when a child is born to a mother who has had a positive drug screen at time of birth.
3. Recommend expanding training at educational institutions regarding overdoses and the trauma caused by witnessing them. This can be done by fully utilizing and expanding the Handle with Care Program.
4. Recommend expanding education on disposal of medications found in the homes and medication take back programs.

Automobile Safety

1. Recommend creating an updated safe driving video including the newer hazards that face teen drivers. Include real-life stories to make the video feel more relatable for teens.
2. 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.
3. Recommend increasing awareness for parents about downloading applications to their child's phone to prevent texting while driving.

Suicide Prevention

1. Recommend engaging the state and county boards of education in expanding the amount of child suicide prevention education in all West Virginia schools. Suicide prevention in school systems needs to increase to include fact sheets on what to look for regarding child suicide risk. This should be available to everyone, especially parents, educators, and anyone who is in close contact with children.
2. Recommend implementation and/or expansion of an anti-bullying campaign in all schools in West Virginia. This needs to include providing support against the stigma and bias against LGBTQ+ persons.
3. Recommend expanding education and awareness of programs that help peers see and understand signs of suicide on social media and/or in school and how to help. Make sure that children are aware that any suicidal ideation should be taken seriously and be reported to a trusted adult.
4. Recommend a campaign on educating adults on the importance of preventing unsupervised access to means of committing suicide. This includes education on methods of ensuring that guns are safely stored in a locked area and unloaded.
5. Recommend the state and county boards of education for all schools be required to reach out to Prevent Suicide West Virginia for potential supportive follow up when a child completes suicide.

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 a water safety campaign enhancing the message to parents and other adults regarding leaving children unattended near water, including the bathtub.
2. Recommend that all public pools in the state be required to have lifeguard stands that are elevated for visibility purposes.

ATV/Motorcycle Safety

1. Recommend adding side-by-sides to the current ATV laws.
2. Recommend increased dissemination of information on the importance of wearing a helmet and helmet enforcement regardless of where ATV is operated. Include information on how to check for proper helmet size for a child.
3. Recommend a required safety certificate for an ATV, a required operator's course, and implement specific age restrictions regardless of where ATV is operated.

Miscellaneous

1. Recommend creating a campaign to teach infant/child 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 that an incident report be required to be filed by law enforcement when attending a child death scene.
4. Recommend a methodology be developed by the state and county boards of education to be implemented in order to monitor home-schooled children to prevent abuse.
5. Recommend increasing awareness of groups and organizations to help kids with grief so that they can get the help they need following the loss of a loved one.
6. Recommend improving the practice of screening in/out referrals to CPS. Continue to update and review the referral screening process.
7. Recommend applicable W.Va. Code sections be amended to permit the panel's West Virginia Department of Education representative to actively participate in review by sharing pertinent info that is currently prohibited from sharing by the Family Educational Rights and Privacy Act (FERPA).

References

1. Cdc.gov. 2020. *Teen Drivers: Get The Facts | Motor Vehicle Safety | CDC Injury Center*. [online] Available at: <https://www.cdc.gov/transportationsafety/teen_drivers/teendrivers_factsheet.html> [Accessed 29 November 2020].
2. Census Bureau QuickFacts. 2020. *U.S. Census Bureau Quickfacts: West Virginia*. [online] Available at: <https://www.census.gov/quickfacts/fact/table/WV#> [Accessed 26 November 2020].
3. *Pediatrics*, 2016. SIDS and Other Sleep-Related Infant Deaths: Updated 2016 Recommendations for a Safe Infant Sleeping Environment. 138(5), p.e20162938.

DOMESTIC VIOLENCE FATALITY REVIEW PANEL

Overview

The West Virginia Domestic Violence Fatality Review Panel (DVFRP), a part of the FMRT, is a statutory body enabled by the West Virginia Legislature under W. Va. Code §61-12A-1. Panel coordination and staff services are housed in the West Virginia Department of Health and Human Resources' (DHHR) Office of the Chief Medical Examiner (OCME). The DVFRP is responsible for reviewing facts and circumstances surrounding all deaths that occurred in West Virginia of victims or suspected victims of domestic violence, including suicides, for those 18 years of age or older.

The DVFRP is required to provide statistical data and analysis concerning the causes of domestic violence fatalities in West Virginia, promote public awareness of the incidence and causes of domestic violence fatalities, as well as include recommendations for their reduction. The fundamental objective of the DVFRP is to prevent future homicides and suicides by providing necessary tools to families, individuals, and appropriate agencies. DVFRP recommendations are intended to protect victims and hold perpetrators accountable for their crime to reduce the number of domestic violence related deaths occurring in the state.

Membership

According to law, the DVFRP operates under the auspices of the OCME, with the State Chief Medical Examiner acting as the chair of the panel. The coordinator is housed within that office as well. Other mandated members of the panel include:

- Four prosecuting attorneys or their designees;
- State Superintendent of the West Virginia State Police or his/her designee;
- One county law enforcement official;
- One municipality police officer;
- One physician, resident, or nurse practitioner specializing in the practice of family medicine or emergency medicine;
- One physician, resident, or nurse practitioner specializing in the practice of obstetrics and gynecology;
- One adult protective service worker currently employed in investigating reports of adult abuse or neglect;
- One social worker who may be employed in medical social work;
- Commissioner of DHHR's Bureau for Behavioral Health or his/her designee;
- Commissioner of DHHR's Bureau for of Social Services or his/her designee;
- One domestic violence advocate from a licensed domestic violence program;
- A representative of the West Virginia Coalition Against Domestic Violence;
- Commissioner of the West Virginia Division of Corrections and Rehabilitation or his/her designee; and
- Director of Office of Epidemiology and Prevention Services in DHHR's Bureau for Public Health or his/her designee.

Types of Deaths Reviewed

The DVFRP reviews cases where the manner of death is classified by the OCME as homicide, suicide, undetermined, or accident. The majority of cases the panel reviews falls into the following categories:

- Homicide committed by current or former intimate partner, current or former roommate, or family member following an act of domestic violence, sexual violence, or stalking, with or without a prior domestic violence history;
- Homicide of perpetrator following an act of domestic violence, sexual violence, or stalking incident to include those caused by officer-involved shootings or bystander intervention;
- Suicide committed by a victim following an act of domestic violence, sexual violence, or stalking; and
- Suicide committed by a perpetrator following an act of domestic violence, sexual violence, or stalking.

Case Review Process

Initial screening of all fatalities is completed by the OCME to determine if they meet the definition for domestic violence. OCME investigators, pathologists and the Fatality and Mortality Review Program (FMRP) Coordinator review all potential cases and make a determination of the domestic violence status based on information available at the time the case is first presented to the OCME. With this method of determination, it is possible some domestic violence cases may be overlooked as vital information is missing at the time of the initial review. In an attempt to identify domestic violence issues, an internet search is performed on West Virginia homicides and undetermined deaths, which sometimes results in the identification of additional domestic violence incidents.

The FMRP Coordinator maintains a running list of all identified domestic violence fatalities which is reviewed by the entire DVFRP. The panel only reviews closed cases and does not attempt to reopen the investigation of those deaths. Closed cases are considered those where the offender is dead, has been convicted in a death, or there is a determination of no further legal action. Consequently, 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 FMRT statutes.

Prior to case review by the DVFRP, a request for records is sent to all agencies identified as having relevant information. Collected information typically includes demographic information, autopsy reports, criminal and civil court histories of the victim and offender, other known history of intimate partner violence, 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.

DVFRP 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:

- Was the fatality the result of a domestic incident as defined by the state statute?
- What were the perilous 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 DVFRP 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 domestic violence. 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 prerogative, recommendations made throughout the year are assembled and presented as wide-ranging proposals for systemic improvements as opposed to case specific ones. It is with optimism that the panel believes that these recommendations can be used to improve system responses across an array of agencies and service providers to reduce or eliminate domestic violence deaths in West Virginia.

Findings

During the 2016 calendar year, there were 196 possible domestic violence cases identified for panel review. In total, 114 cases were determined to be domestic violence-related fatalities with 82 being ruled out either prior to or during panel review.

The National Coalition Against Domestic Violence (NCADV) defines domestic violence as the willful intimidation, physical assault, battery, sexual assault, and/or other abusive behavior as part of a systematic pattern of power and control perpetuated by one intimate partner against another [1]. This violence could include behaviors such as stalking, intimidation, threats, physical violence, sexual violence, emotional abuse, psychological abuse, or economic deprivation [1]. The DVFRP does not limit the definition of domestic violence to intimate partners only. The definition includes family members as well as roommates sharing a dwelling.

Demographics

In 2016, a majority of the domestic violence deaths reviewed by the panel were males. Figure 1 shows the percentage of deaths that were male compared to the percentage of deaths that were female. Males accounted for 79 of the 114 deaths with the other 35 deaths being females. Data for West Virginia differs from what is generally seen nationally as current data show a higher rate of male fatalities. Nationally, the NCADV shows that on average one in three women and one in four men have been abused by an intimate partner [1]. Additionally, one in five homicides are committed by an intimate partner. In females specifically, over 50% of victims are murdered by a male intimate partner [4]. A portion of male deaths were suicides by a perpetrator. A study of males in a court-ordered domestic violence perpetrator intervention program reported 22% of participants had experienced suicidal thoughts within two weeks [10]. Data on perpetrators who commit suicide is scarce, but this provides some logic as to why the state data differs from national data.

Figure 1: Domestic Violence Fatalities by Sex

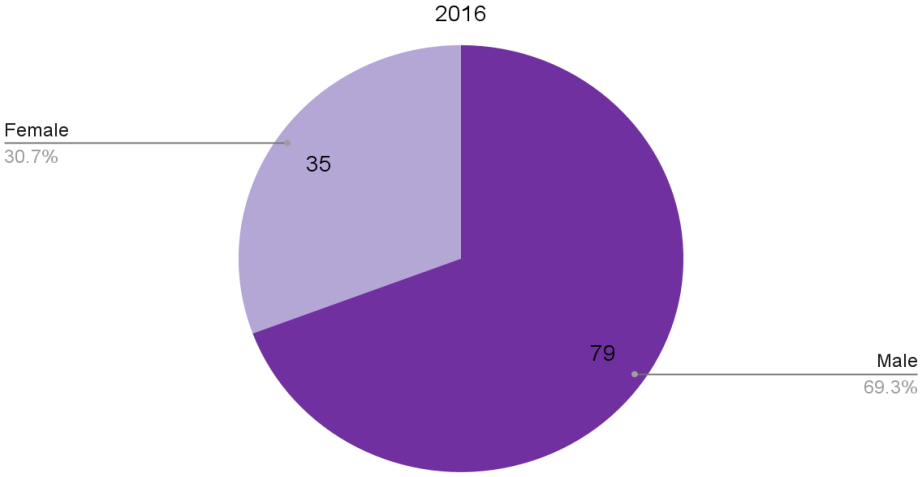
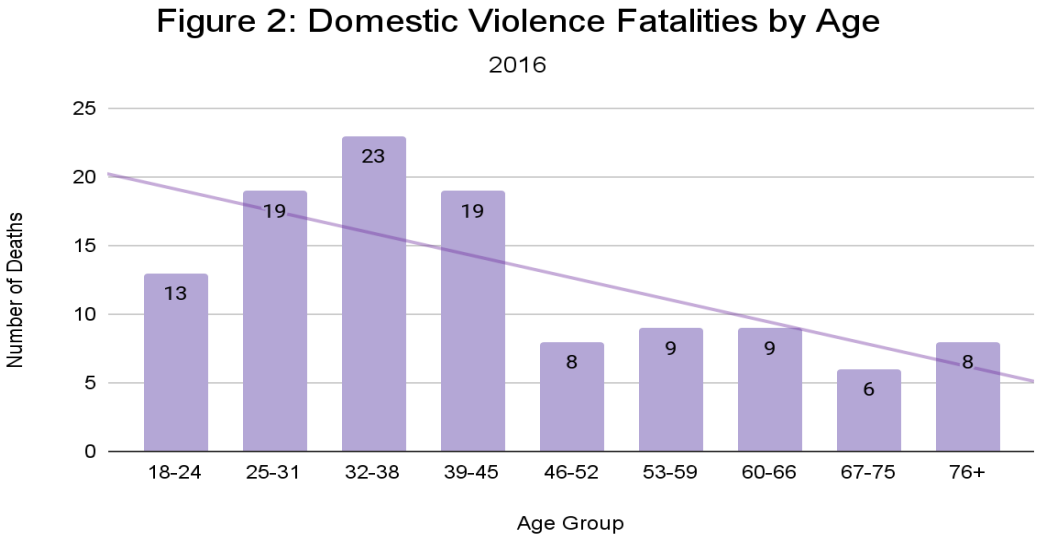
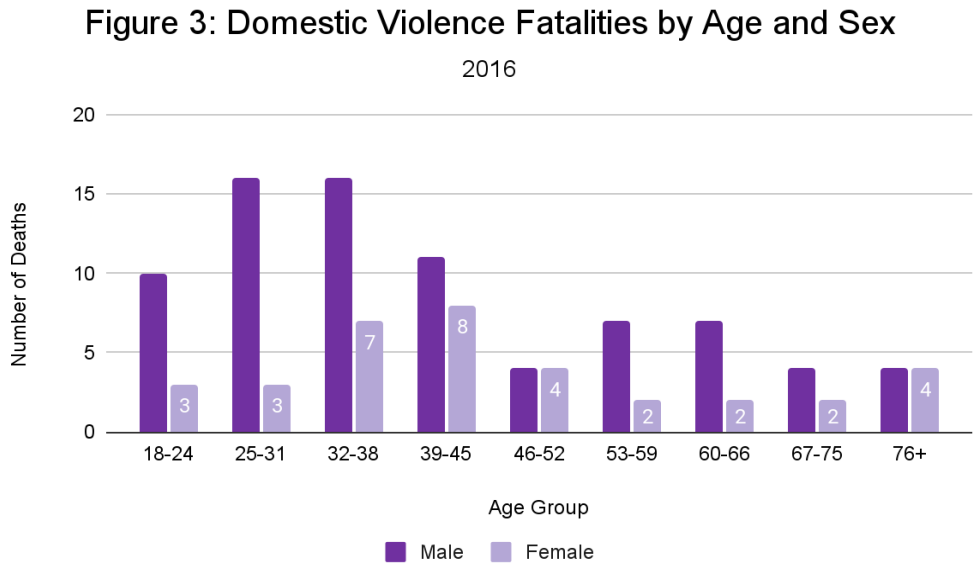


Figure 2 displays the trends for domestic violence fatalities by age. Age groups used were six-year increments. The ages of domestic violence victims in West Virginia ranged from 18 years to 92 years old. The peak age range for domestic violence fatalities was between 32 and 38 years of age.



To further examine the trends, Figure 3 compares the fatalities by age as well as sex.



When looking at deaths by race, almost all of the decedents were Caucasian. In Figure 4, 94.7% or 108 of the decedents were Caucasian. One of these individuals was of Hispanic ethnicity. Six deaths or 5.3% percent were black. Although West Virginia's population is 92.3% white [5], minority races are at a higher risk of domestic violence [6]. In the black community, 45.1% of women and 40.1% of men report experiencing either physical or sexual violence or stalking by an intimate partner [6].

Figure 4: Domestic Violence Deaths by Race

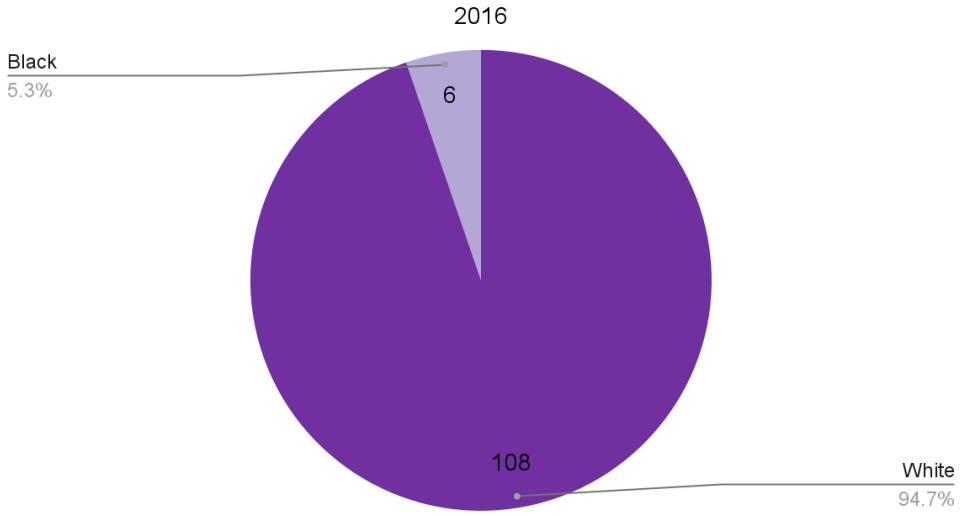


Figure 5 shows the deaths by both race and sex. Caucasian male deaths accounted for 64.0%, or 73 deaths, followed by Caucasian females accounting for 30.7%, or 35 reviewed deaths. Black males accounted for 5.3%, or six deaths. Although the population of West Virginia is largely white [5], women of color are at a higher risk of domestic violence than their white counterparts. Per NCADV, 51.3% of black women who die due to homicide are killed in relation to intimate partner violence [6]. According to the Blackburn Center, domestic violence is the leading health issue facing black women today [7]. Based on the data, it is an unexpected finding that there were no black female deaths in the cases reviewed.

Figure 5: Domestic Violence Deaths by Race and Sex

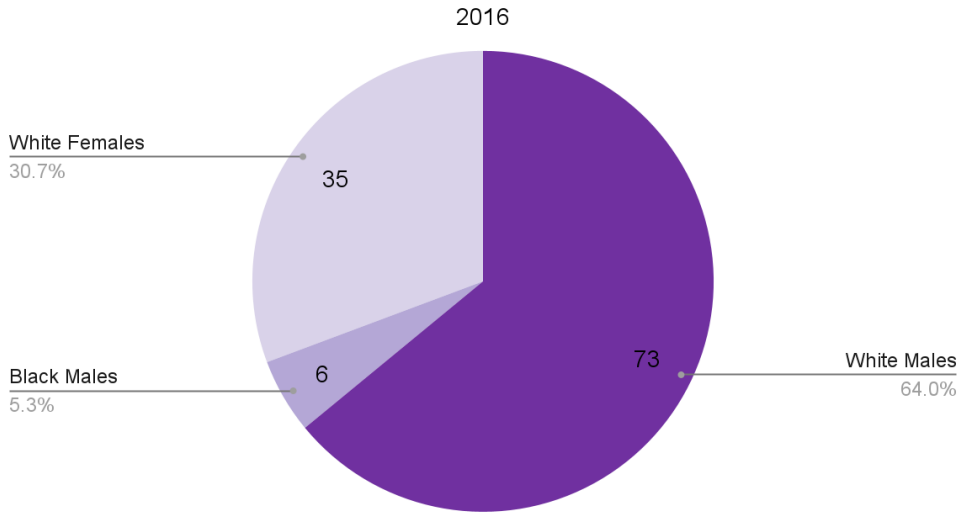
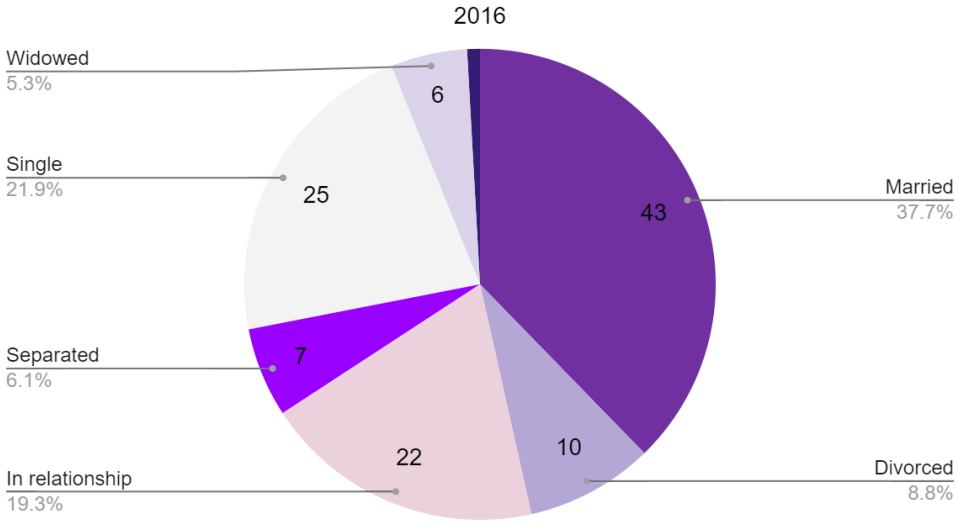


Figure 6 shows deaths distributed by relationship status. The largest group represented is “married” accounting for 37.7% of domestic violence-related deaths. Divorced and separated individuals accounted for just under 15% of deaths. Relationship status is reported this way rather

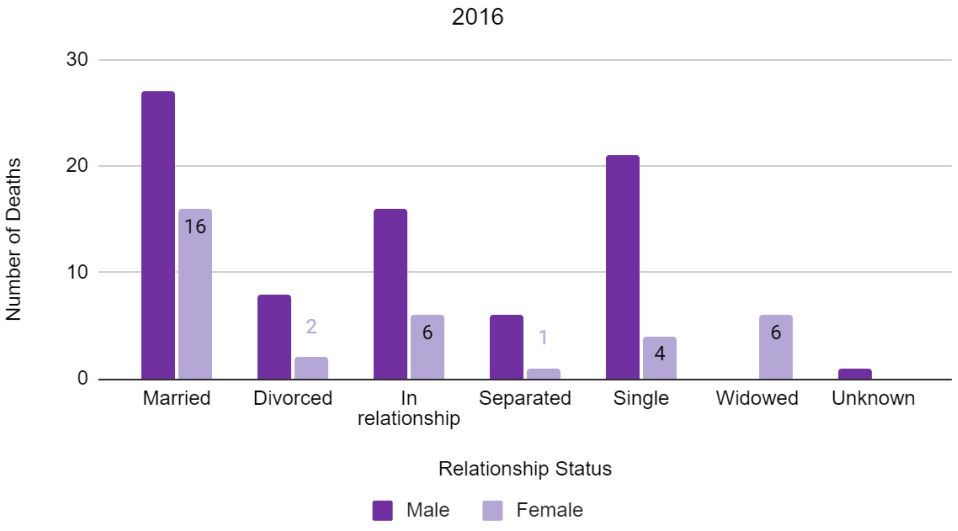
than legal marital status in order to be accurate and inclusive of the decedent's relationship status at the time of death. For example, their legal status may be "divorced" but they are in a relationship.

Figure 6: Relationship Status of Decedent



National data state that women are most vulnerable to violence when separated from their intimate partner or during divorce [2]. Divorced or separated men are over eight times more likely to commit suicide than female counterparts. Some contributing factors are custody arrangements, betrayal or jealousy as their spouse moves on, and poor mental health [16].

Figure 7: Relationship Status of Decedent by Sex



Manner of Death

Manner of death is broken into four categories: accident, undetermined, suicide, and homicide. Figure 8 shows that most of the domestic violence deaths that were reviewed in West Virginia in

2016 were suicides. Suicides accounted for 70 of the 114 reviewed deaths, or 61.4%. The link between domestic violence and suicide is often overlooked. However, there is some indication that those who have experienced domestic violence are at a higher risk of suicide than those who have not. Substance Abuse and Mental Health Services Administration (SAMHSA) reported that in 2016, 4.1% of all West Virginia adults had experienced serious thoughts of suicide [11]. This was followed by homicides at 31.6% with 36 deaths reviewed falling within that category. Three deaths (2.6%) were undetermined in manner and five deaths were accidental.

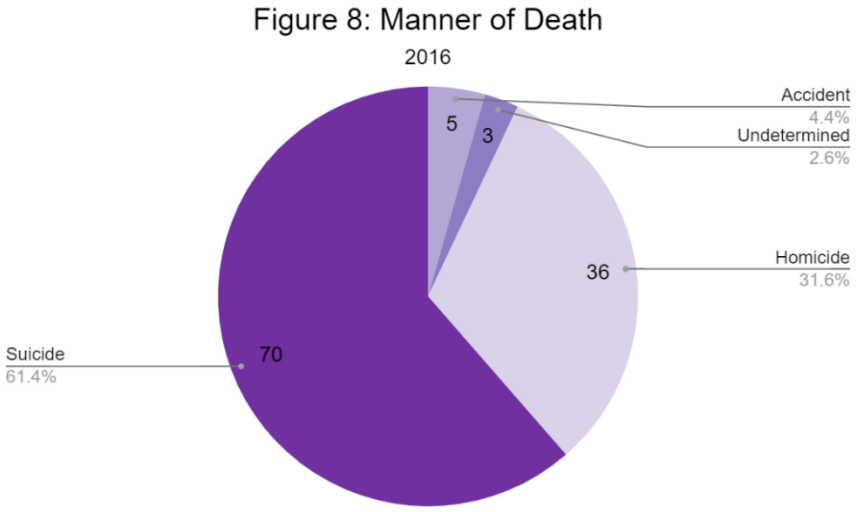
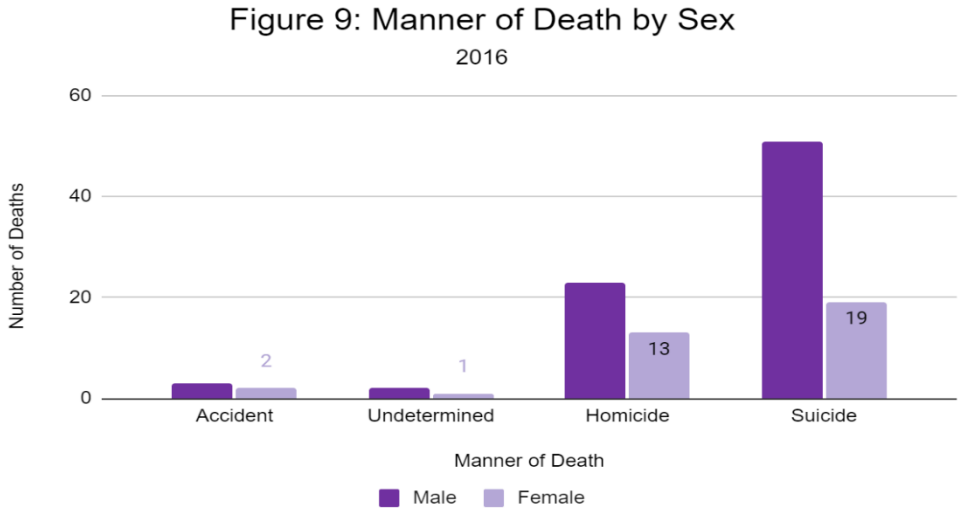
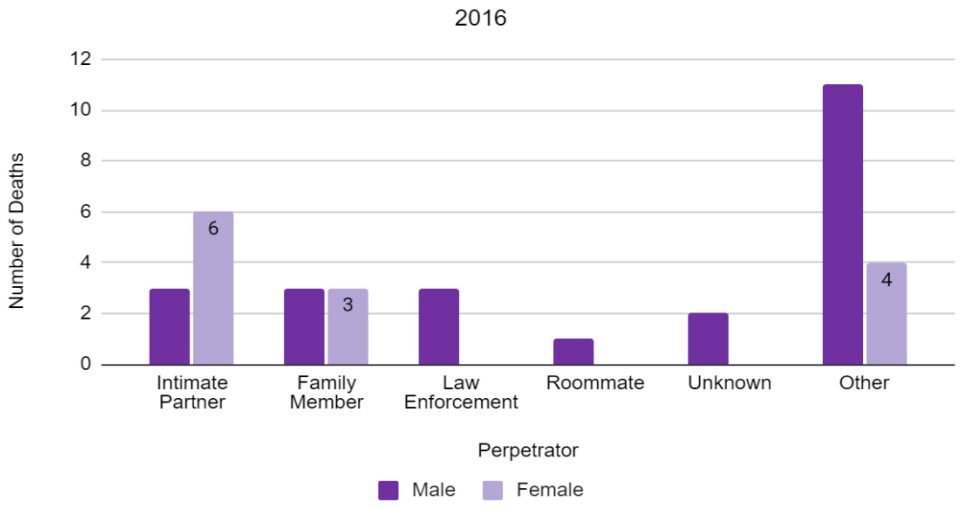


Figure 9 compares the manner of death and sex. The data show that males are most likely to commit suicide when related to domestic violence deaths. Male suicides were more than twice as frequent as females and accounted for 44.7% or 51 reviewed deaths. It is important to recall that in several of these suicides, the male decedent was a perpetrator of domestic violence. While this may not be a victim in the traditional sense, the death was still attributed to domestic violence. Female suicides accounted for 16.7% or 19 of the deaths reviewed. According to the Emerge Center Against Domestic Abuse, female survivors of domestic abuse are seven times more likely to contemplate suicide than women who have not experienced domestic violence [8]. Male homicides accounted for 20.2% or 23 deaths and female homicides accounted for 11.4% or 13 deaths. In 2010, 37% of female homicides nationally were committed by an intimate partner compared to only 3% of male homicides [9]. Only three deaths were undetermined with two being male and one being female.



Male and female homicide victims had differences in perpetrators. Females were most often killed by an intimate partner. Males were killed most often by a category labeled “other” which includes individuals such as acquaintances, new partners of an ex, in-laws, or extended family members.

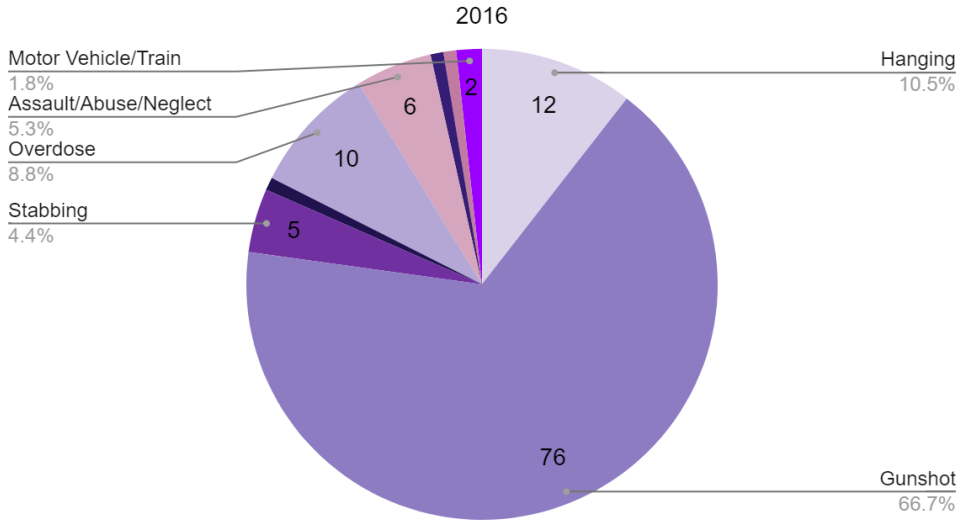
Figure 10: Perpetrator of Homicide by Decedent's Sex



Cause of Death

Domestic violence related deaths were broken into nine categories for cause of death, as seen in Figure 11, based on frequency. The most prevalent cause of death was gunshot wounds, which accounted for 76 deaths or 66.7% of all reviewed deaths.

Figure 11: Cause of Death



Distribution of Deaths for Various Categories

Figure 12 is a heatmap showing the occurrences of domestic violence fatality across the state. The most deaths occurred in Kanawha County with 17 reported deaths, followed by Cabell County, which had 12. There were 17 counties that did not have any domestic violence-related deaths. These numbers are raw numbers for the reported deaths per county and did not take into

account the population size of each county. Of note, there were five deaths in which the individual was not a West Virginia resident but died in the state.

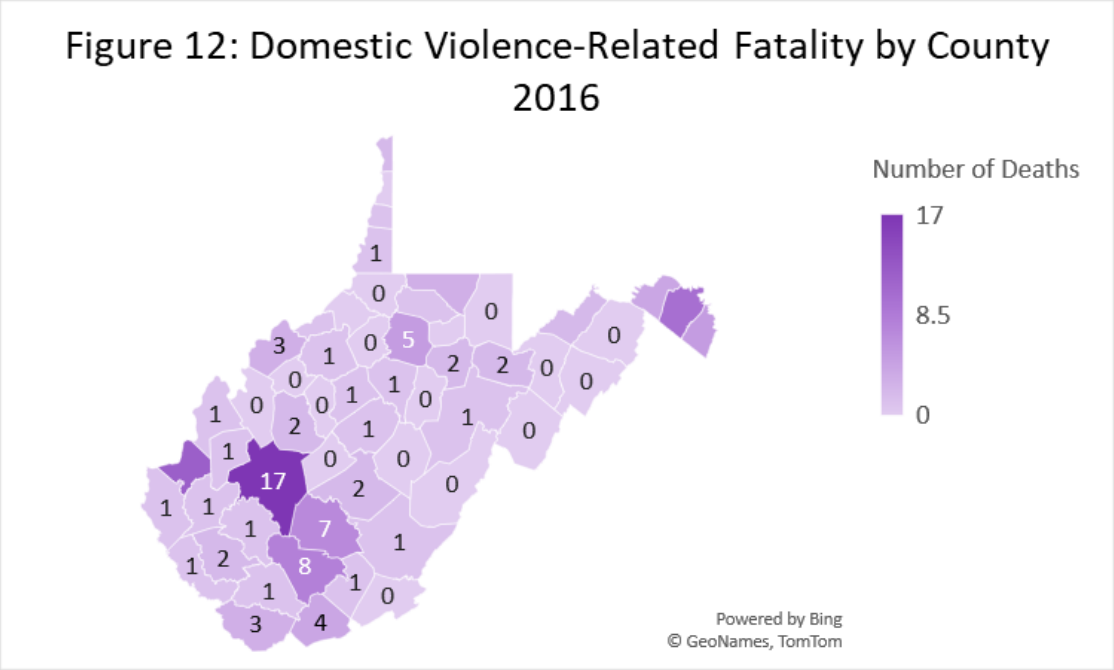
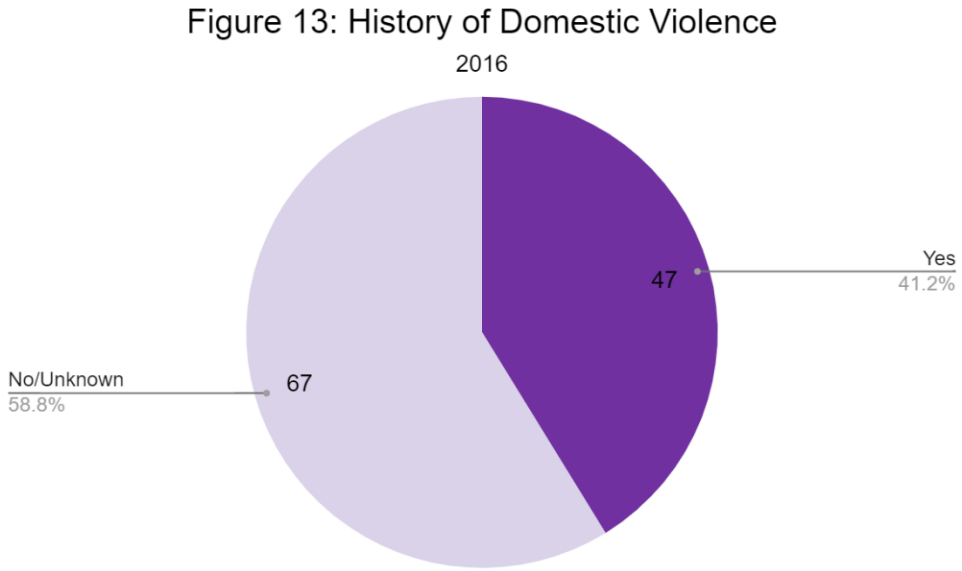
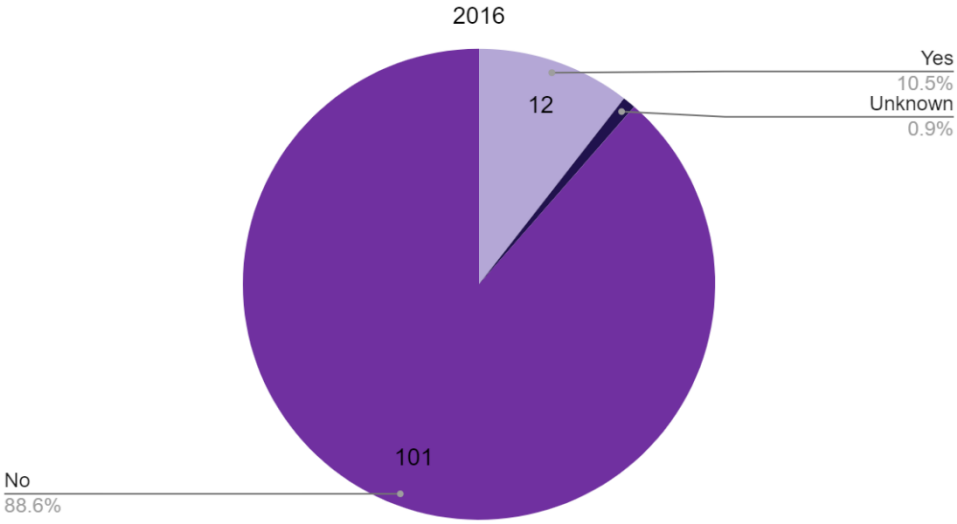


Figure 13 shows the number of domestic violence deaths in which there was a known domestic violence history. Of the deaths in 2016, 47 individuals or 41.2% had a history of domestic violence. This could have been either as the perpetrator, victim, or both in some cases. West Virginia law prohibits anyone convicted of a domestic violence-related assault or battery of possessing firearms [W. Va. Code §61-7-7]. This is important considering that the majority of deaths involve a firearm.



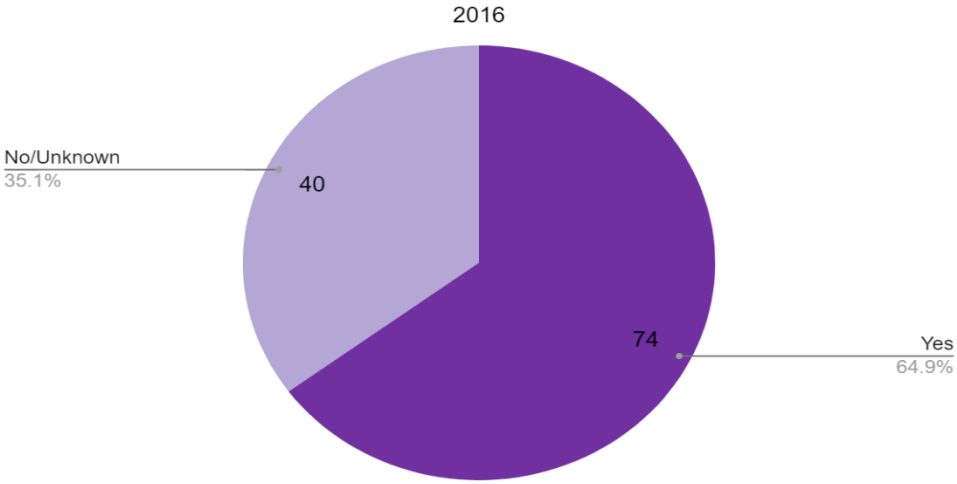
In 2016, 12 of the 114 domestic violence deaths had an active domestic violence protection (DVP) order in place. The decedent may have been the petitioner or respondent. There was one case in which a DVP had been filed but it could not be verified as active at the time of death. National data show that a victim's risk of being killed significantly increases while in the process of leaving or after they have recently left [2]. In West Virginia it is illegal for the respondent of a DVP to possess a firearm [W. Va. Code §61-7-7]. As most deaths involve the use of a firearm, this is important to consider.

Figure 14: Active DVP at Time of Death



Arguing is a common precipitating factor in domestic violence-related deaths. Data from 2016 reported that 74 individuals had been in an argument prior to death. Arguments in these deaths range from what loved ones would describe as a typical spat to events requiring law enforcement intervention.

Figure 15: Argument Prior to Death



Another possible correlation is the number of domestic violence-related decedents that were known to have a mental illness. Nearly 47% of decedents had diagnosed mental health issues. This value is further broken down by sex in Figure 16. It is important to note that the information

in this chart is only depicting those with a **known** history of mental illness. Therefore, there could be more that did suffer from an undiagnosed mental health disorder. Additionally, this is the mental health status of the decedent. In cases of homicide, the perpetrator may have had a mental illness but that is not included here. It was reported that in 2017, 5.6% of adults in West Virginia had some form of serious mental illness (SMI). SMI is defined as “diagnosable mental, behavioral, or emotional disorder of sufficient duration to meet diagnostic criteria specified in the DSM-IV and has resulted in serious functional impairment, which substantially interferes with or limits one or more major life activities” [11]. Many witnesses in these deaths report changes in the decedent’s mental health or recent threats and attempts of suicide but did not feel it was concerning enough to intervene.

Figure 16: Known History of Mental Illness

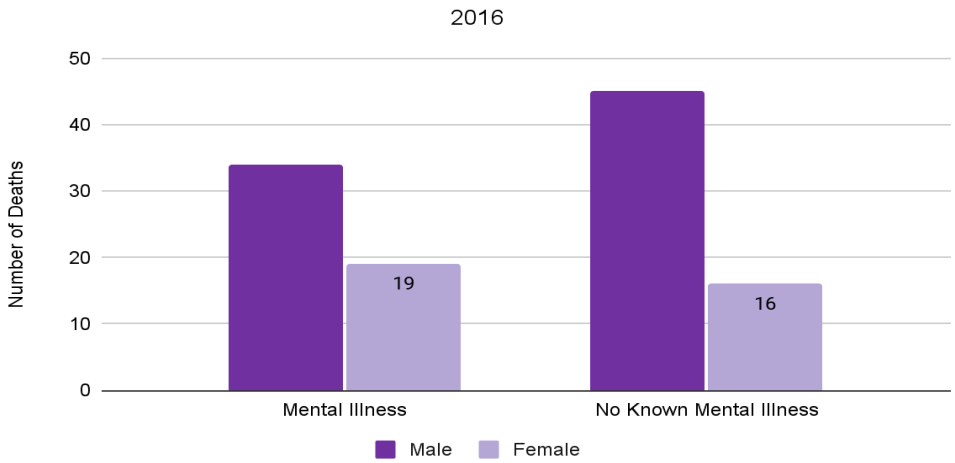
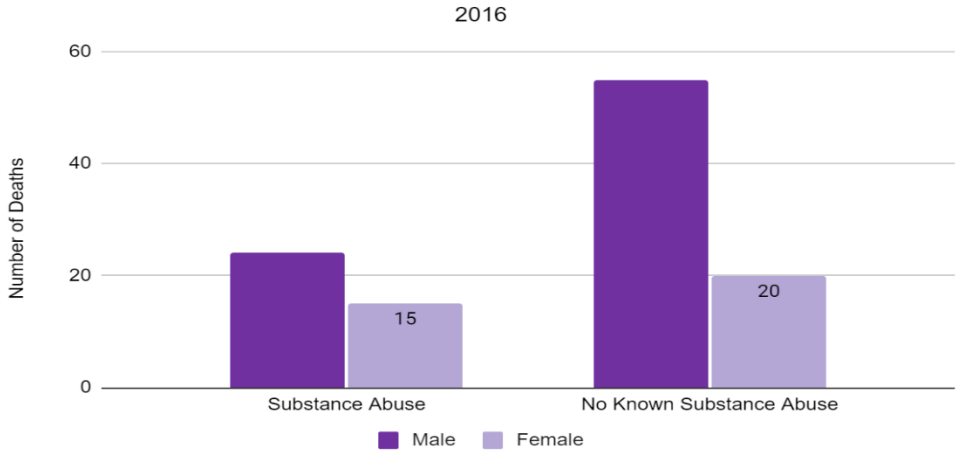


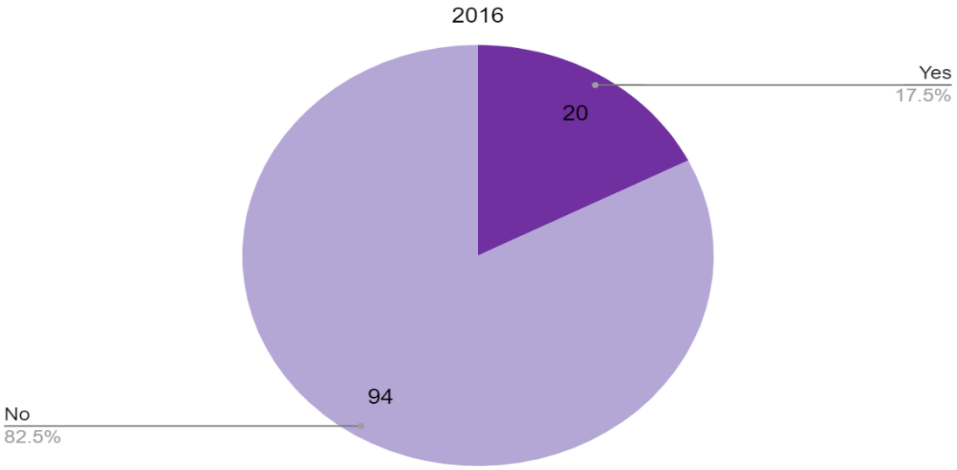
Figure 17 shows the substance abuse status of the domestic violence decedents. For the purpose of this report, substance use includes abuse of illegal or prescription drugs. Again, this is reflective of the decedent and **not** the perpetrator. Just under 30% of decedents had a history of some form of substance abuse. West Virginia has been struggling with substance use disorder for many years. In its 2017 report, SAMHSA indicated that 5.8% of West Virginians aged 12 and older had substance use disorder [11]. The CDC reported that in 2017, 32.6% of drug deaths were due to overdose, meaning that 67.4% of deaths were homicide, suicide, motor vehicle accident, or firearm related [12]. While not accounted for in this graph, many decedents had high levels of alcohol in their system at the time of death. These were not included due to lack of information on if this was acute or historically habitual behavior.

Figure 17: History of Substance Abuse



Twenty of the 114 deaths reviewed had at least one child present. This does not necessarily mean that the child witnessed the death, but that they were present when the death occurred. This is a major issue, as research has shown that children who experience childhood trauma, including domestic violence, are at a greater risk of tobacco use, substance abuse, obesity, cancer, heart disease, depression, and unintended pregnancy [3]. Further, children who are exposed to domestic violence, either as a witness or victim, are at a higher risk of being in an abusive situation in adulthood [13]. It is reported that in homes where domestic violence occurs, children witness it between 80 to 90 percent of the time. An estimated 30 to 60 percent of children are also victims of abuse [13].

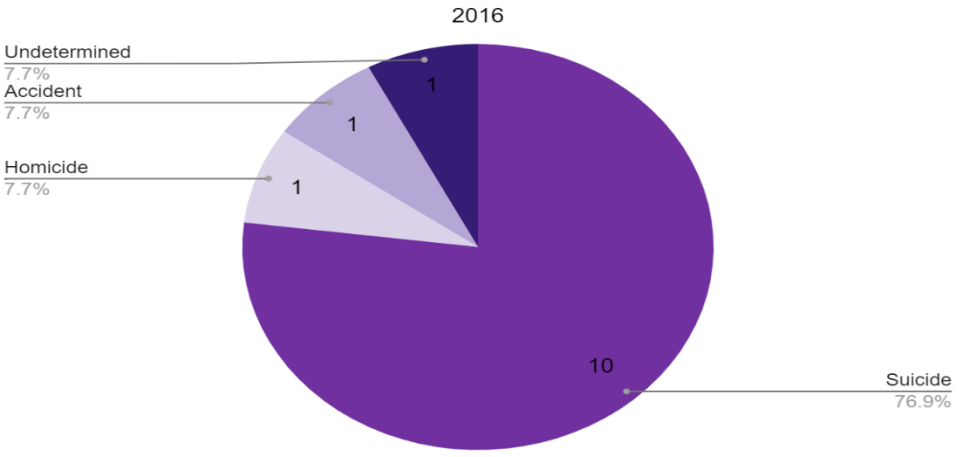
Figure 18: Child Present at Scene of Death



Veteran Populations

In total, 13 of 114 decedents had served in the U.S. Armed Forces. The majority of those deaths were suicides, as seen in Figure 19. A 2013 article examined post-combat veterans from the Iraq war and found that 19.1% who served in Iraq and 11.3% who served in Afghanistan returned from combat with some mental health effects. Additionally, 9.8% from Iraq were clinically suffering from post-traumatic stress disorder (PTSD). Among combat veterans with PTSD, 33% perpetrated physical abuse and 91% demonstrated psychological aggression towards their intimate partner [14]. Additionally, suicide rates among veterans are much higher than that of civilians. From 2001 to 2019, the United States saw a 23.1% decline in the veteran population. However, the suicide rate rose 35.9%. The suicide rate was highest in the 18-34 age range. The peak of veteran suicides during that time frame was in 2017 comprising 13.5% of all suicides in the country [15].

Figure 19: Cause of Death in Veterans



Data Limitations

Domestic violence fatalities reviewed by the DVFRP were determined to meet the definition of domestic violence set forth in the W. Va. Code. Some fatalities reviewed may have had elements of domestic violence identified in the victims' lives but were not found to be domestic violence-related deaths. This accounts for the discrepancy between the 196 cases reviewed and the 114 cases determined to be domestic violence-related deaths as a result of review. The DVFRP does not claim that all domestic violence related fatalities that occurred in the reporting year have been identified.

2016 West Virginia DVFRP Recommendations

Note: Due to the retrospective nature of the DVFRP, some of the recommendations listed may already be in the implementation process at time of report dissemination.

1. The DVFRP recommends a centralized coordinator who would work to ensure that law enforcement response is consistent and conducted in accordance with West Virginia laws and Legislative rules. This includes one office to be established to coordinate the training response statewide. This would be an office that could communicate and collaborate with all the systems and disciplines by employing a person(s) who would coordinate training and best practices based on the best examples from around the state and across the nation. By creating a collaborative environment, that includes the West Virginia Coalition Against Domestic Violence, the West Virginia Foundation for Rape Information Services, the DVFRP, all STOP Teams, all Sexual Assault Response Teams, and Title IX offices, a victim could expect the same comprehensive response anywhere in West Virginia.
2. The DVFRP recommends that it be granted access to the Domestic Violence Offender Registry as it would help the panel gather more information on victims and perpetrators.
3. The DVFRP recommends an updated domestic violence awareness campaign, which would include exploitation of the elderly.
4. The DVFRP recommends the implementation of Dangerousness Lethality Assessment Guide (D-LAG) training for regional jails. The panel believes that this would allow intervention to be made at that point that could potentially save a life.
5. The DVFRP recommends increasing training for law enforcement related to awareness of domestic violence and elder abuse. The panel believes that law enforcement generally sees domestic violence as being between intimate partners, but that is only a portion of the actual domestic violence cases.
6. The DVFRP recommends continuation and expansion of the Kanawha County Pilot Project with the magistrate court where one judge handles all cases of a domestic violence offender. This allows the judge to see the entire history of the offender and make sure that sentences are appropriate to the crimes committed.
7. The DVFRP recommends that prosecuting attorneys include no access to firearms as a standard condition of bond for domestic violence-related offenses. The panel believes that the limitation of access to firearms for offenders could potentially reduce the number of firearm related deaths.
8. The DVFRP recommends that more services be offered to families of victims. This would include access to scene cleanup as well as grief counseling free of charge. The panel believes that there are a limited number of these types of services currently available in the state.
9. The DVFRP recommends that a change be made to current Adult Protective Services policies to include contacting law enforcement when there is a reasonable suspicion of abuse, neglect, or exploitation even in cases that are not substantiated during their assessment.

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INFANT AND MATERNAL MORTALITY REVIEW PANEL

Overview

The Legislature found that there was a need for a process to study the causes of infant and maternal deaths. Comprehensive studies indicate that these mortalities are more complex than they initially appear on death certificates and believe that more extensive studies will enable development of a plan to reduce these deaths in the future. Thus, an additional multi-year report was added by legislation passed in 2020, now codified at W. Va. Code §61-12A-2.

The Infant and Maternal Mortality Review process is a method of understanding the diverse factors and issues that contribute to preventable deaths and identifying and implementing interventions to address these problems. The knowledge gained from the reviews may be used to enhance services, influence public health policy, and direct planning efforts intended to lower mortality rates.

Responsibilities of the Infant and Maternal Mortality Review Panel (IMMRP)

The responsibilities of the IMMRP are as follows: (1) identify infant and maternal death cases; (2) review medical records and other relevant data; (3) determine preventability of deaths; (4) establish trends, patterns and risk factors and develop recommendations for the prevention of infant and maternal deaths; (5) provide statistical analysis regarding the causes of infant and maternal fatalities; (6) disseminate findings and make recommendations to policymakers, health care providers and facilities; and (7) promote public awareness of the incidence and causes of infant and maternal fatalities, including recommendations for their reduction.

The IMMRP submits an annual report to the FMRT and the West Virginia Legislature concerning its activities and the incidence of infant and maternal fatalities within West Virginia. The report is to include statistics setting forth the number of infant and maternal fatalities, identifiable trends in infant and maternal fatalities in the state, including possible causes, if any, and recommendations to reduce the number of preventable infant and maternal fatalities in the state.

Definitions

Infant Death: Death of a live born infant in the first year of life.

Infant Mortality Rate: Number of infant deaths divided by the number of live births (rate reported per 1,000).

Live Birth: The complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy, which, after such expulsion or extraction, breathes or shows any evidence of life such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached.

Maternal Death: Death of a woman during pregnancy, at the time of birth or within one year of the birth of a child from any cause related to or aggravated by pregnancy or its management, but not from accidental or incidental causes.

In 1986, the CDC and the American College of Obstetricians and Gynecologists (ACOG) collaborated to issue a statement recommending the use of two enhanced surveillance definitions

as an approach to more accurately identify deaths among women in which pregnancy was a contributing factor.

Pregnancy-Associated Death (ACOG/CDC): The death of a woman while pregnant or within one year of termination of pregnancy, irrespective of cause.

Pregnancy-Related Death (ACOG/CDC): The death of a woman while pregnant or within one year of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by her pregnancy or its management, but not from accidental or incidental causes.

Pregnancy-related deaths are caused by:

- Complications of the pregnancy itself
- Chain of events initiated by the pregnancy
- Aggravation of an unrelated condition or event by the physiologic effects of pregnancy

Pregnancy-Related Maternal Mortality Rate: Number of maternal deaths related to or aggravated by pregnancy divided by the number of live births (rate reported per 100,000).

Review: The process by which all facts and circumstances about a deceased infant who has died in the first year of life; or, a woman who has died during pregnancy, at the time of birth, or within one year of giving birth, are known, and discussed among members of the IMMRP.

Unexpected Death: The death of an infant who has died in the first year of life, or a woman who has died during pregnancy, at the time of birth or within one year of the birth of a child, whose immediate death is not anticipated.

Unexplained Death: The cause and manner of death of an infant who has died in the first year of life; or, a woman who has died during pregnancy, at the time of birth or within one year of the birth of a child, that cannot be determined after an autopsy and thorough investigation of the circumstances surrounding the death.

Case Identification of Maternal Deaths

Maternal deaths are identified by linking death certificates for women aged 10-50 years with birth certificates and fetal death certificates. Additional maternal deaths are identified by ICD 10 diagnostic codes O00–O99 – pregnancy, childbirth and the puerperium. All maternal deaths occurring within 365 days of pregnancy conclusion are designated as pregnancy-associated and further investigated.

Cases for review are limited to women of childbearing age who were residents of West Virginia at the time of their death. West Virginia residents who died in other jurisdictions are counted in DHHR's official West Virginia Health Statistics Center reports, but they are included in the case reviews only when additional information is available due to the difficulty in obtaining records across jurisdictions.

A Nurse Reviewer reviews death and birth certificates for all pregnancy-associated deaths. Once cases are identified as potentially pregnancy-related, medical records are obtained from all health care facilities providing care before, during and after the pregnancy conclusion. Hospital records at the time of death and autopsy reports are included when applicable. Medical records are de-identified, and a summary of events is developed. These documents are sent to all members

prior to the meeting. Information is entered into a CDC database known as the Maternal Mortality Review Information Application (MMRIA, or "Maria"). MMRIA is a standardized data collection tool to assist in understanding the causes of maternal mortality and eliminating preventable pregnancy-related deaths.

The IMMRP reviews all pregnancy-associated deaths to determine if they are pregnancy-related. The Panel determines whether the maternal death was preventable, possibly preventable, or not preventable. Opportunities for prevention and recommendations are determined through IMMRP discussion.

Case Identification of Infant Deaths

Infant deaths are identified by linking birth and death certificates for infants in the first year of life. Due to perinatal influences of the mother's health and maternal risk factors, maternal medical information obtained during pregnancy is also reviewed.

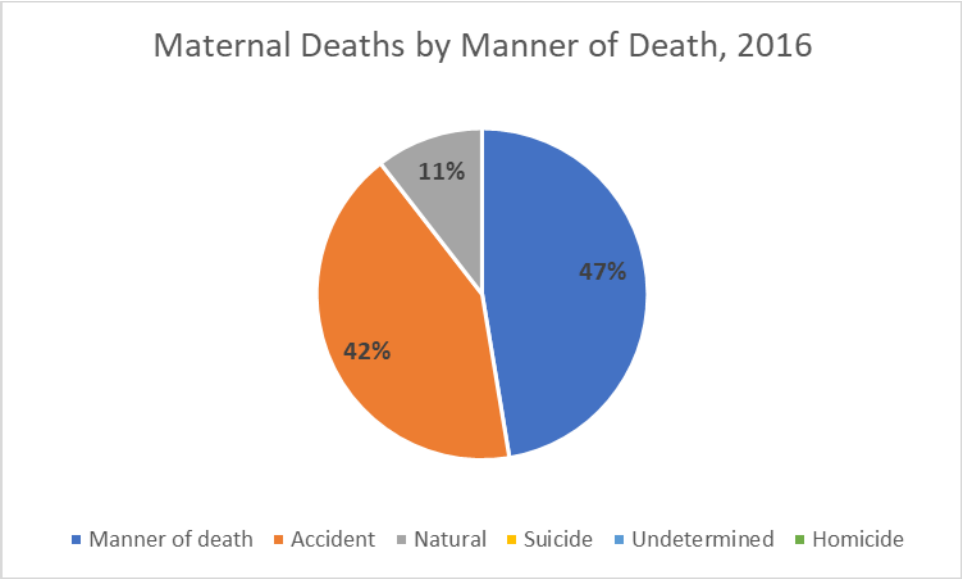
Case reviews are limited to live born infants who were residents of West Virginia at the time of their death. Infants who died in other jurisdictions are counted in DHHR's official West Virginia Health Statistic Center reports but are only included in case reviews when additional information is available due to the difficulty in obtaining records from other jurisdictions.

Maternal Deaths 2016

Manner of Death

In 2016, there were 19 pregnancy-associated maternal deaths of which two were determined to be pregnancy-related. The manner of death was listed as: nine (47%) accident, eight (42%) natural, and two (11%) suicide deaths.

The rate of pregnancy-related maternal mortality in 2016 was 10.5 per 100,000 (calculated as two maternal deaths divided by 19,059 resident births – based upon 2016 DHHR – West Virginia Health Statistics Center data).

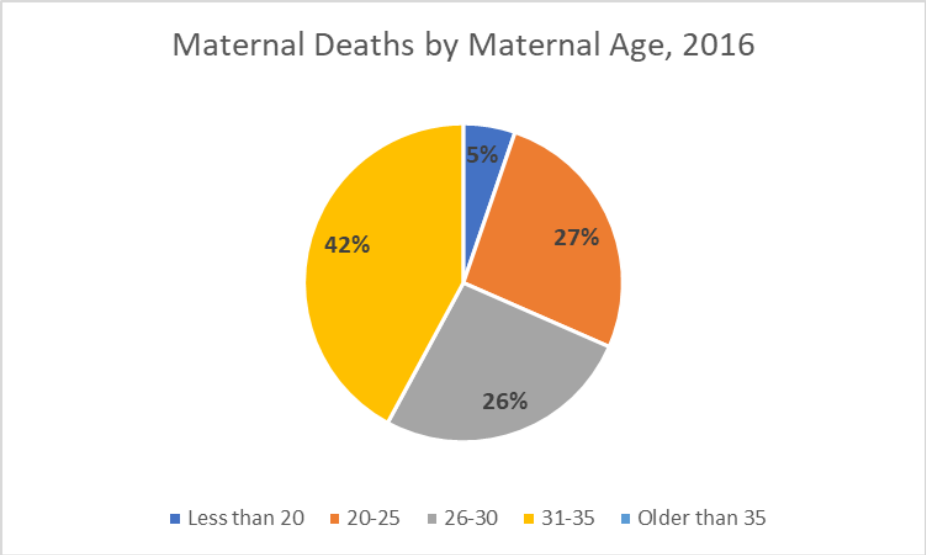


Cause of Death

In 2016, there were 19 pregnancy-associated maternal deaths. Drug abuse was the cause of five deaths. Eight deaths were natural with causes of two possible peripartum cardiomyopathy, anoxic brain injury with renal failure due to prolonged cardiac arrest, lethal arrhythmia, acute respiratory distress syndrome (ARDS) multifocal pneumonia sepsis, indirect obstetric care, probable atherosclerotic cardiovascular disease and broncho-pneumonia. Three deaths were the result of motor vehicle accidents. Two deaths were attributed to self-inflicted gunshot wounds.

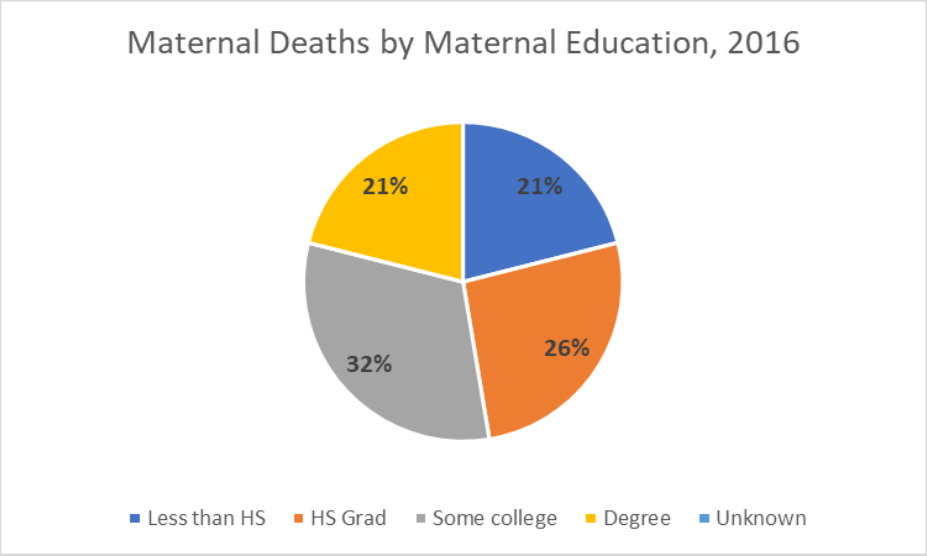
Maternal Age

In 2016, of the 19 pregnancy-associated maternal deaths, one was less than 20 years of age, five were 20-25 years of age, five were 26-30 years of age, and eight were 31-35 years of age.



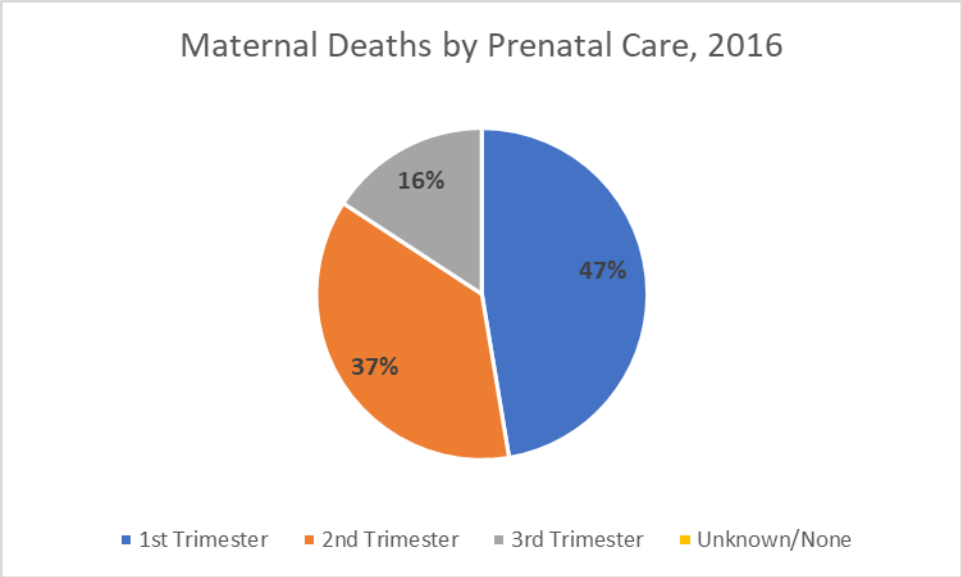
Maternal Education

In 2016, of the 19 pregnancy-associated maternal deaths, four had less than a high-school education, five had at least a 12th grade education, six had some college, and four had college degrees.



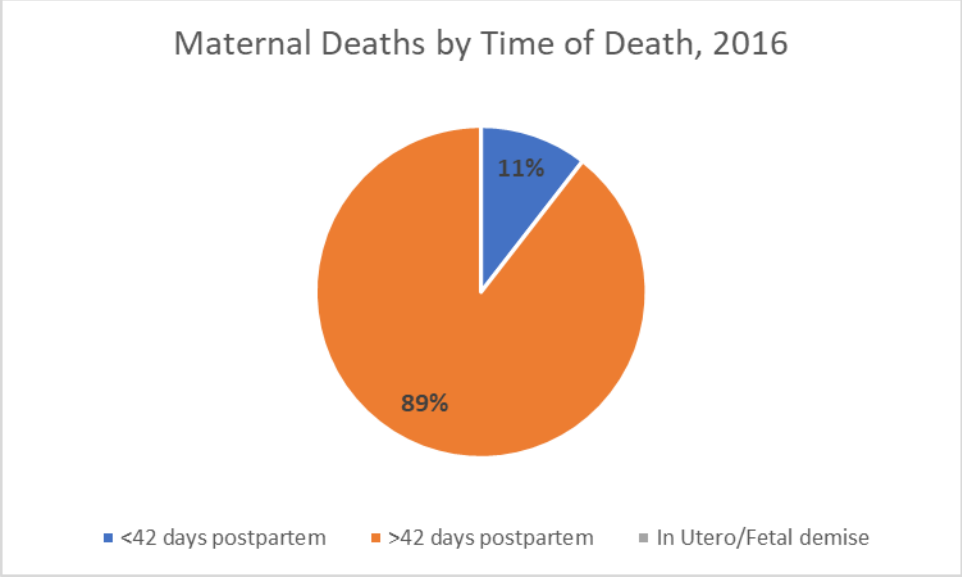
Maternal Prenatal Care

In 2016, of the 19 pregnancy-associated maternal deaths, nine began prenatal care in the first trimester, seven began prenatal care during the second trimester, and three began prenatal care during the third trimester.



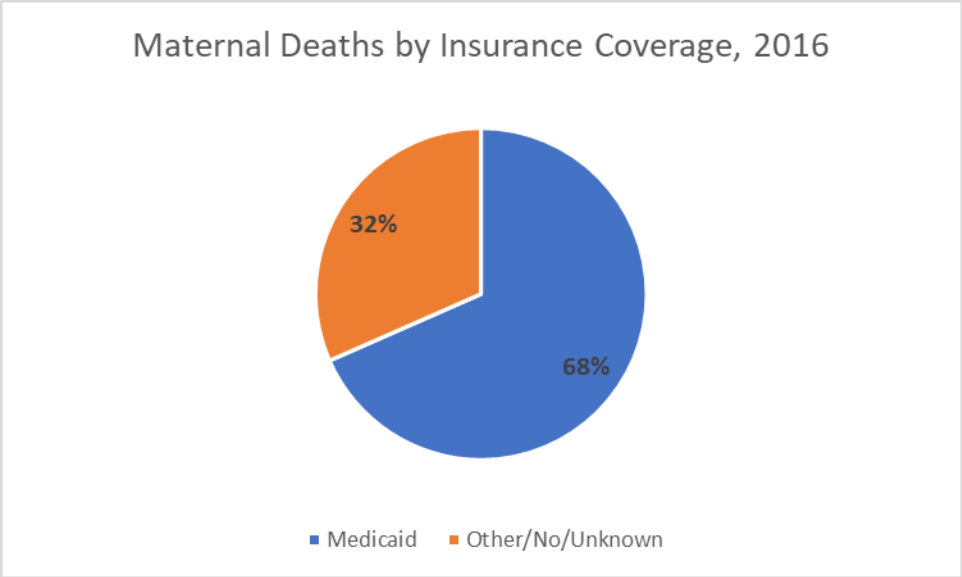
Time of Death

In 2016, of the 19 pregnancy-associated maternal deaths, two deaths, both of which were pregnancy-related, occurred less than 42 days postpartum, and 17 deaths occurred greater than 42 days postpartum.



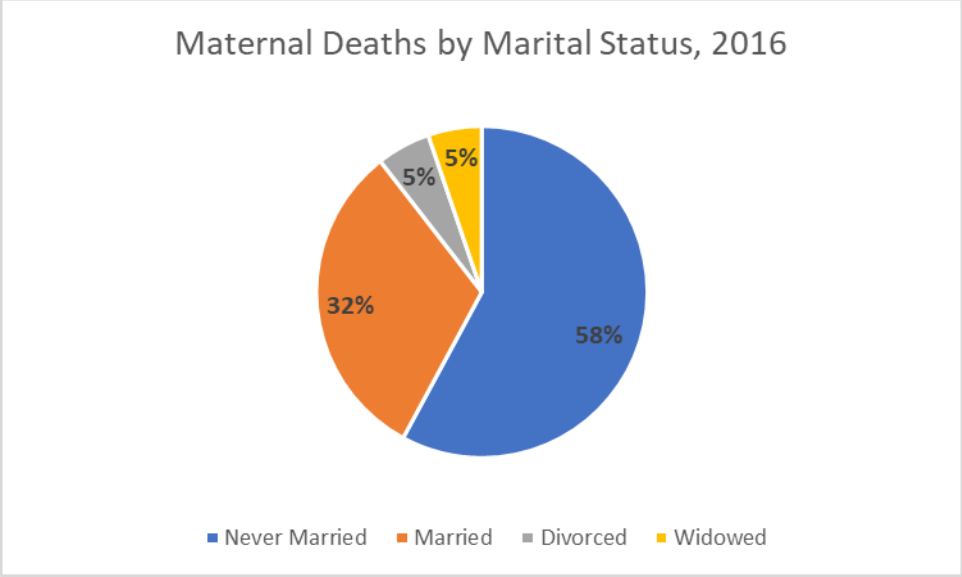
Maternal Insurance Coverage

In 2016, Medicaid was the primary insurance coverage for 13 of the 19 pregnancy-associated maternal deaths, six deaths were either covered by other insurance or had no/unknown insurance coverage.



Maternal Marital Status

In 2016, 11 of the 19 maternal deaths had never been married, six were married, one was divorced, and one was widowed.

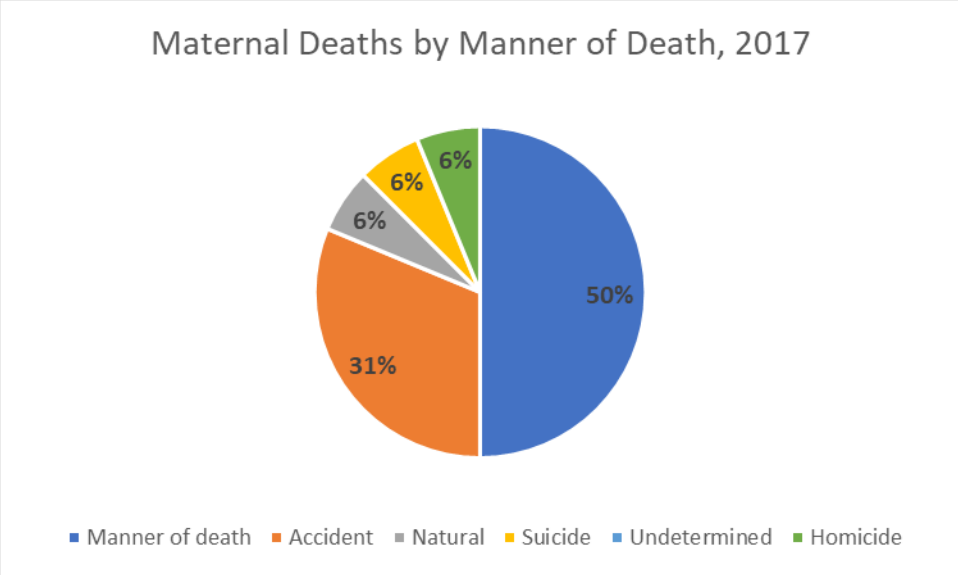


Maternal Deaths 2017

Manner of Death

In 2017, there were 16 pregnancy-associated maternal deaths of which four were determined to be pregnancy-related, one was tabled for discussion, and one could not be determined whether pregnancy-related or associated. The manner of death was listed as: eight (50%) accident, five (31%) natural, one (6%) suicide, one (6%) undetermined, and one (6%) pending determination.

The rate of pregnancy-related maternal mortality in 2017 was 21.4 per 100,000 (calculated as four maternal deaths divided by 18,675 residence births – based upon 2017 DHHR – West Virginia Health Statistics Center data).

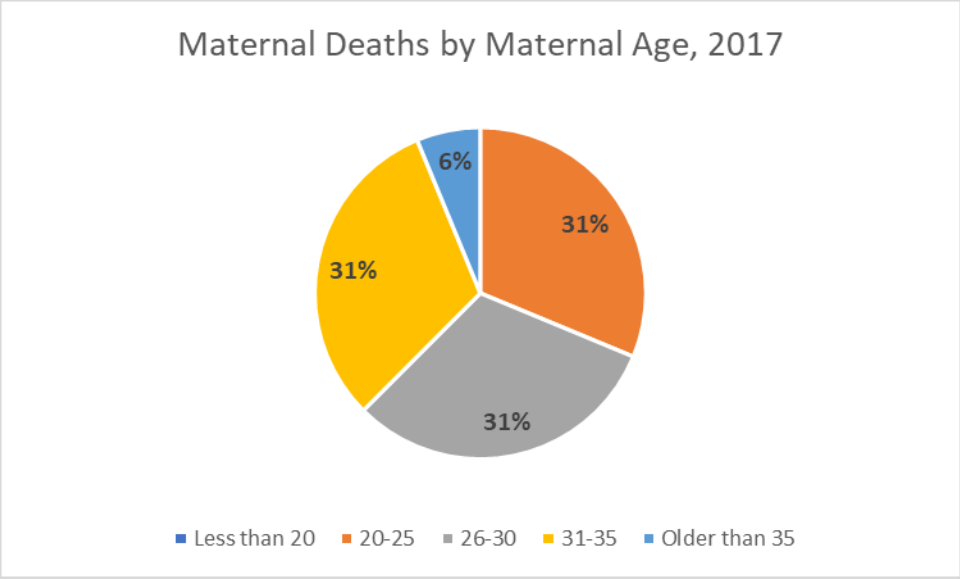


Cause of Death

In 2017, there were 16 pregnancy-associated maternal deaths. Drug abuse was the cause of seven deaths, but drug use was noted in 12 of the 16 deaths. Five deaths were natural with one cause of obesity and one cause of bilateral necrotizing pneumonia. One death was due to a self-inflicted gunshot wound, one death had ill-defined causes, one death was due to complications of a c-section wound, and one death had a pending cause.

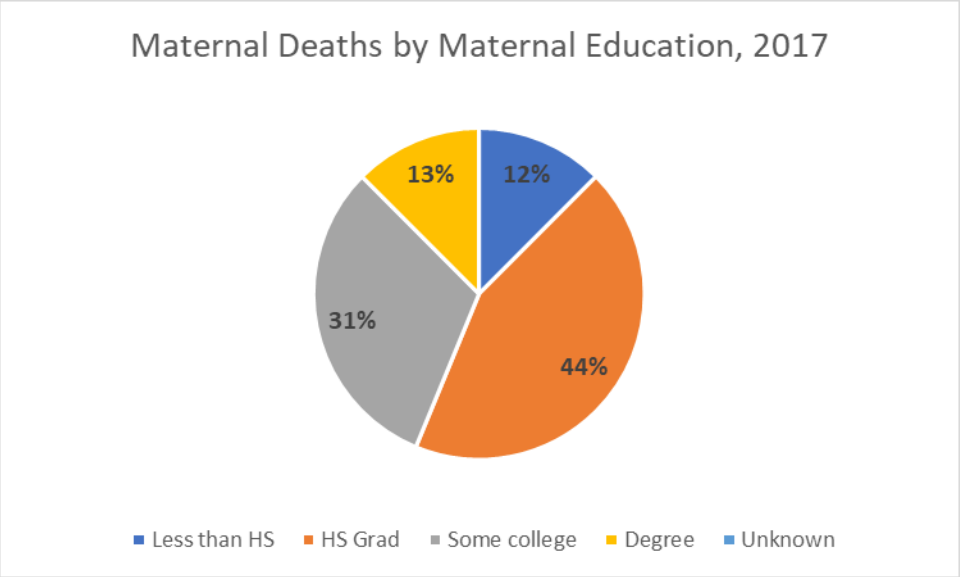
Maternal Age

In 2017, of the 16 pregnancy-associated maternal deaths, five were 20-25 years of age, five were 26-30 years of age, five were 31-35 years of age, and one was older than 35 years of age.



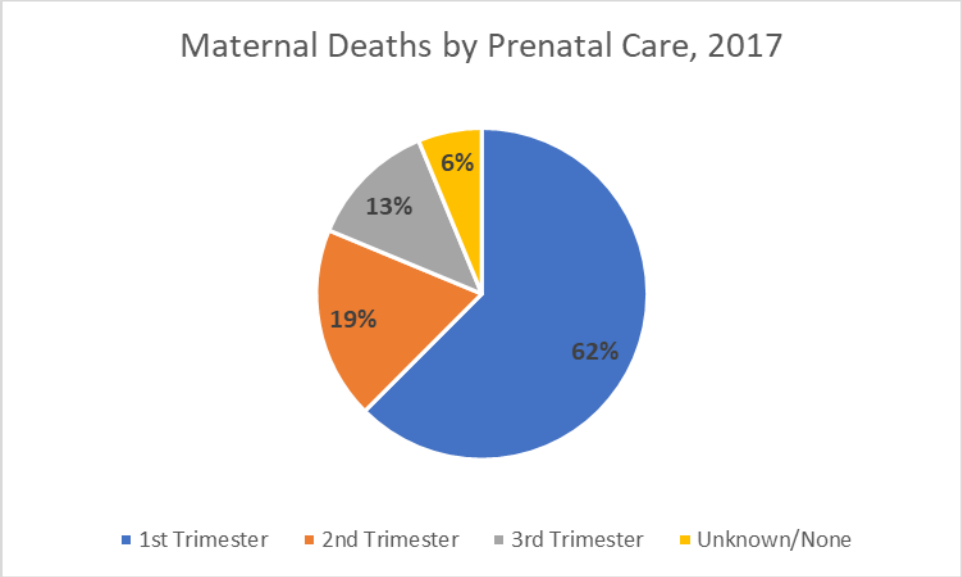
Maternal Education

In 2017, of the 16 pregnancy-associated maternal deaths, two had less than a high school education, seven had at least a 12th grade education, five had some college, and two had a college degree.



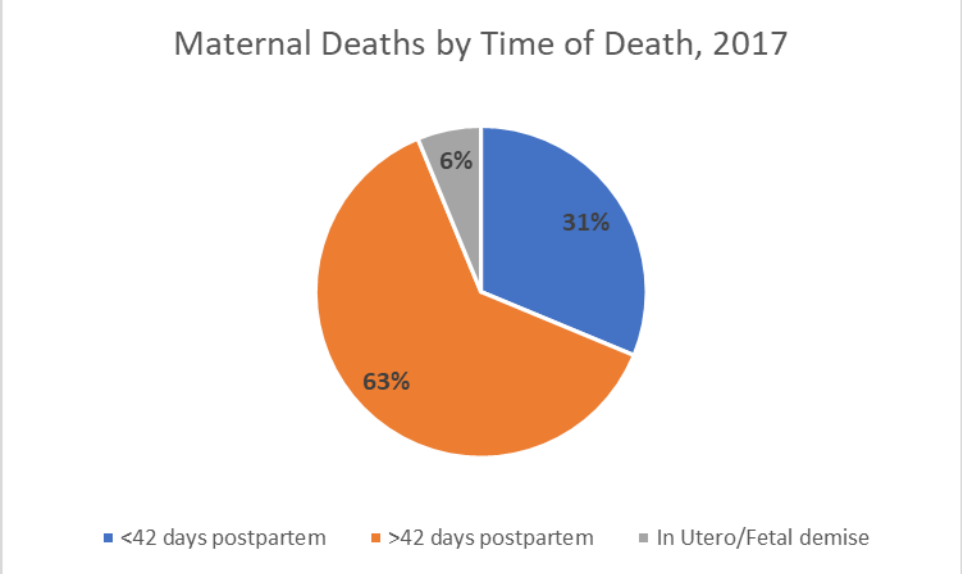
Maternal Prenatal Care

In 2017, of the 16 pregnancy-associated maternal deaths, ten began prenatal care in the first trimester, three began in the second trimester, two began in the third trimester, and one had unknown prenatal care.



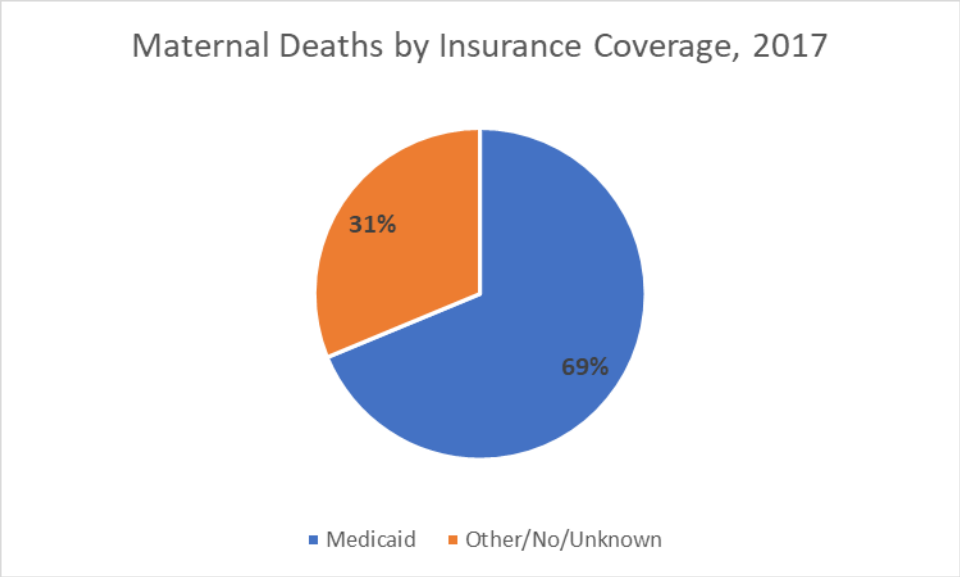
Time of Death

In 2017, of the 16 pregnancy-associated maternal deaths, one death occurred with baby in utero; five deaths, of which two were pregnancy-related, occurred less than 42 days postpartum; and ten maternal deaths occurred greater than 42 days postpartum.



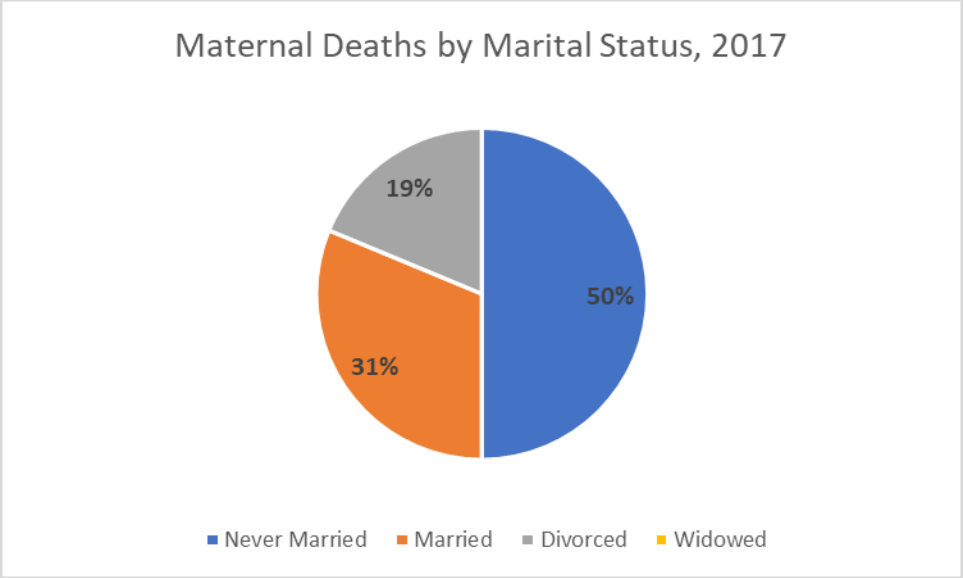
Maternal Insurance Coverage

In 2017, Medicaid was the primary insurance coverage for 11 of the 16 pregnancy-associated maternal deaths; five deaths were either covered by other insurance or had no/unknown insurance coverage.



Maternal Marital Status

In 2017, eight of the 16 maternal deaths had never been married, five were married, and three were divorced.



Recommendations to Date: Maternal Deaths

Note: Due to the retrospective nature of the IMMRP, some of the recommendations listed may already be in the implementation process at time of report dissemination.

After review of cases, the following recommendations have been made by the IMMRP:

- Education to be provided on the use of vacuum delivery.

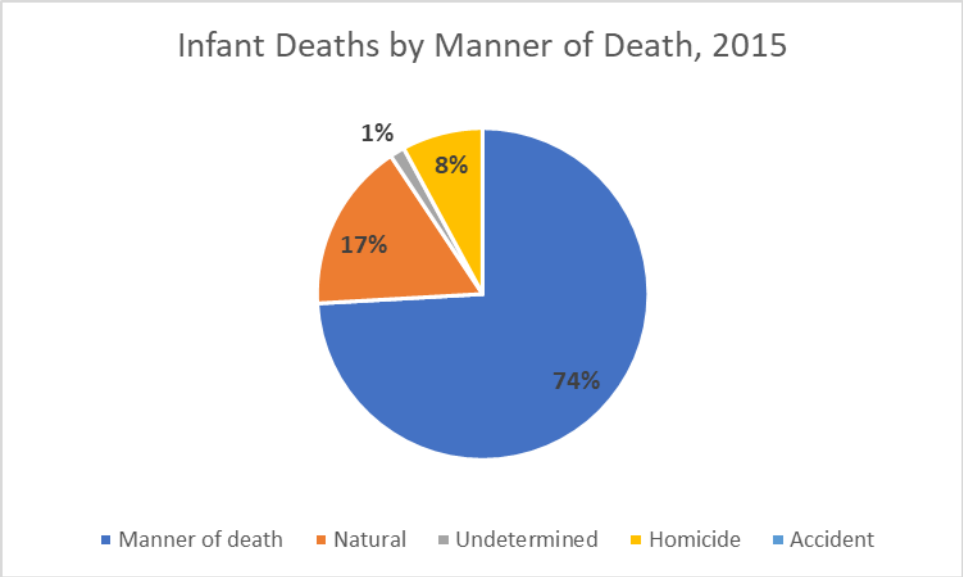
- All Maternal Mortality cases be referred to DHHR's Office of the Chief Medical Examiner (OCME) for determination regarding the need for an autopsy.
- Promote screening for postpartum depression prior to maternal discharge from hospital.
- Posters to promote screening and help for postpartum depression.
- Identify and/or promote drug treatment programs in jails; promote seamless referral system for continued treatment for continued treatment post-incarceration.
- Assess if West Virginia prisons provide substance use disorder (SUD) treatment on site.
- Identify and promote available drug treatment/mental health services.
- Review hospitals' criteria for admission of individuals with suicidal ideations (direct admits).
- Additional law enforcement investigation of maternal deaths due to suspected overdoses.
- Narcan be added to the Medicaid Pharmacy Formulary for pregnant women and during postpartum for up to one year after the delivery period.
- Developing a tool to educate on sex during pregnancy.
- Consider offering long-acting reversible contraception (LARC) at all medication-assisted treatment (MAT) offices for easy accessibility to decrease pregnancy in unstable patients. Improve the system to help postpartum mothers get LARC with minimal barriers.
- Provide options for infant and maternal cases to be received in hard copy or electronic versions.
- DHHR's State Health Officer and Commissioner for the Bureau for Public Health to recommend the IMMRP laws be modified to permit cases be identifiable and additional details be shared with IMMRP members.
- IMMRP members receive cases in advance of meeting to have adequate time to review cases and be able to indicate specific cases they would like to discuss by sending an email.
- Obtain out-of-state records for infants who are delivered or expired out of state and mothers who expired out-of-state.
- Request the Governor advocate with out-of-state governmental entities to commit to improved inter-jurisdictional data sharing.

Infant Deaths 2015

Manner of Death

For calendar year 2015, 139 infant deaths were reviewed by the IMMRP. The manner of death was listed as 103 (74%) natural, 23 (17%) undetermined, two (1%) homicide, and 11 (8%) accident.

The infant mortality rate for West Virginia in 2015 was 7.02 infant deaths per 1,000 live births (calculated as 139 infant deaths divided by 19,778 resident births - 2015 DHHR – West Virginia Health Statistics Center data). In 2015, the CDC reported the U.S. infant mortality rate as 5.9 infant deaths per 1,000 live births.

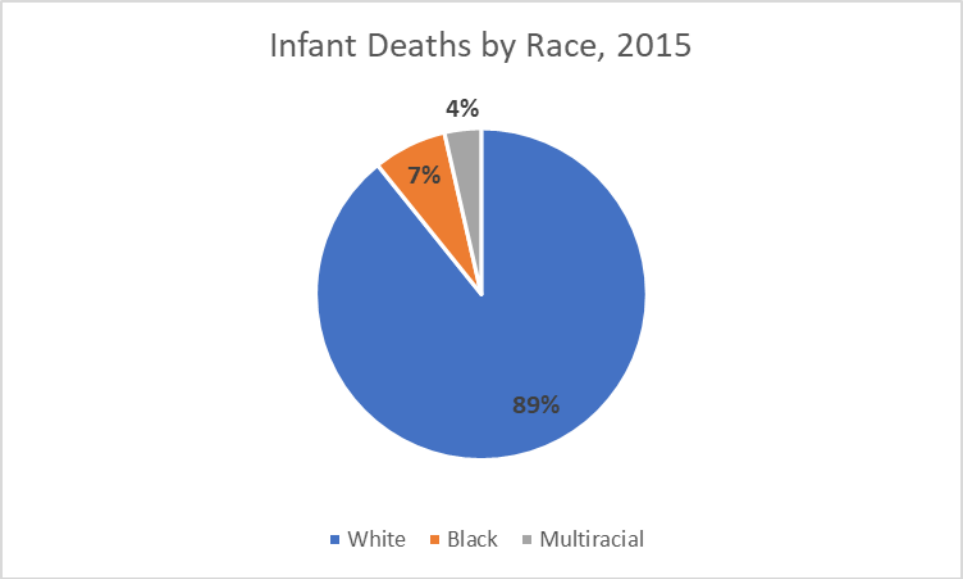


Cause of Death

In 2015, of the 139 infant deaths, 36 deaths were due to prematurity, 42 deaths were due to birth defects, 23 deaths were due to Sudden Unexplained Infant Deaths (SUID), 25 deaths were medical related, 11 were due to accidents, and two were due to homicide.

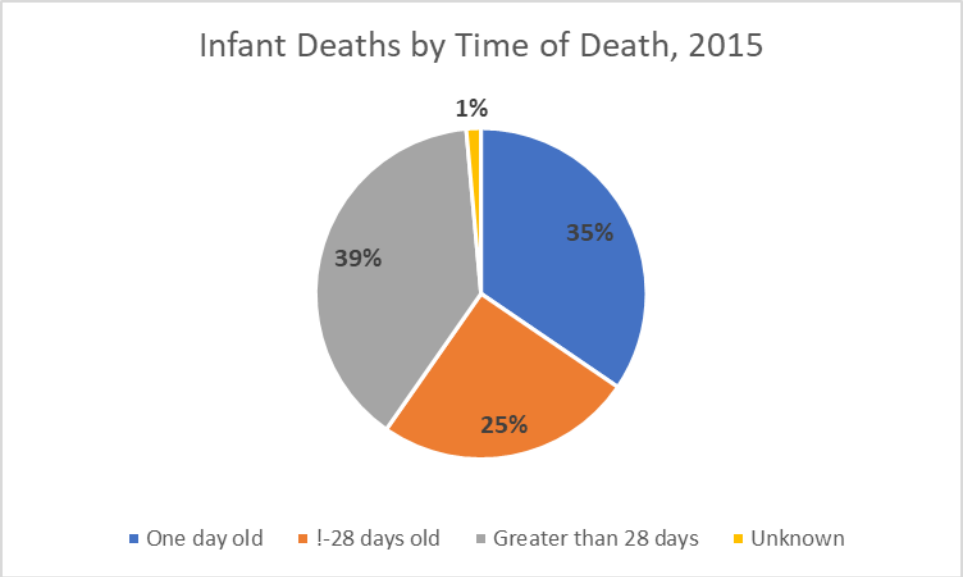
Infant Race

In 2015, 124 of the 139 deaths were white, ten were black, and five were multiracial.



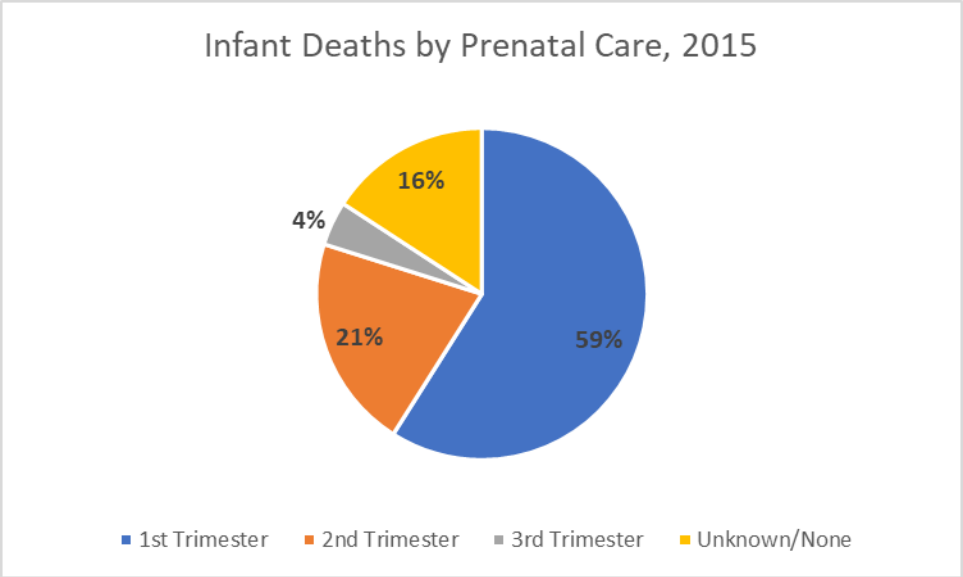
Infant Age at Time of Death

In 2015, 48 of the 139 deaths were less than one day old, 35 were 1-28 days old, 54 were greater than 28 days old, and two were unknown age.



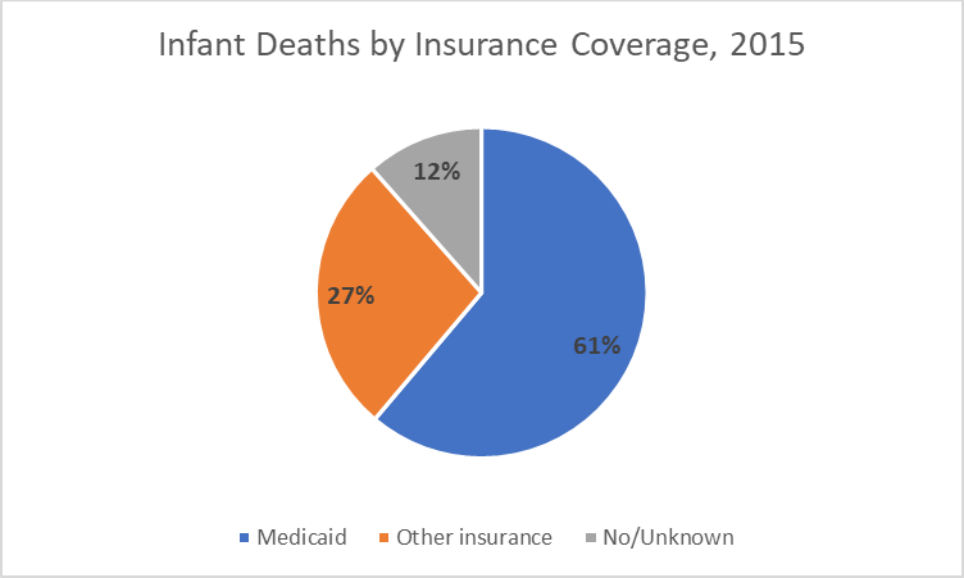
Maternal Prenatal Care

In 2015, 82 of the 139 infant deaths began prenatal care in the first trimester, 29 began prenatal care during the second trimester, six began prenatal care in the third trimester, 13 had no prenatal care, and the remaining nine had unknown prenatal care.



Insurance Coverage

In 2015, Medicaid was the primary medical coverage in 85 of the 139 infant deaths, while 38 were covered by other insurance, and 16 deaths had no/unknown insurance coverage.



Preventability

Nurse abstractors began using the Fetal and Infant Mortality Review (FIMR) data system with the collection of 2015 infant death information. Standardized data collection is a first step toward fully understanding the causes of infant mortality. The purpose of the FIMR process is to identify and take action to prevent a wide range of social, economic, public health, education and environmental and safety factors that contribute to the tragedy of fetal and infant loss. The preventability of death is reflected in this section.

After in-depth panel discussions, it was determined that 30 (22%) of the 139 infant deaths in 2015 were probably preventable, 94 (68%) were probably not preventable, the preventability of 10 (7%) deaths could not be determined, and 5 (3%) deaths had an unknown preventability.

Manner	Could the Death Have Been Prevented? 2015 FIMR				Total
	No, Probably Not	Yes, Probably	Could Not Determine	Unknown	
Natural	74	2	3	3	82
Accident	3	8	0	0	11
Suicide	0	0	0	0	0
Homicide	0	2	0	0	2
Undetermined	1	17	2	2	22
Pending	0	0	0	0	0
Unknown	16	1	5	0	22
Total	94	30	10	5	139

Of the 30 preventable infant deaths in 2015, the race of 29 (97%) were white and the race of one (3%) was black. Twenty-four (80%) of the deaths were sleep-related. Four (13%) had an open

CPS file at the time of death. Twenty-four (80%) were insured through Medicaid, five (17%) were insured privately, and the insurance status of one (3%) was unknown.

Recommendations to Date: Infant Deaths

Note: Due to the retrospective nature of the IMMRP, some of the recommendations listed may already be in the implementation process at time of report dissemination.

After review of cases, the following recommendations were noted:

- Consult with CPS about changing protocols to keep cases involving mothers that use drugs open and follow-up after the infant is taken home.
- Facilities keep cord tissue for one week after delivery at all West Virginia birthing facilities.
- Drug screening of all infants born in West Virginia.
- All pulse oximetry results will be added to the Birth Score.
- Notify physicians and/or hospitals of infants and mothers who experienced a poor outcome due to medical practice issues or provide education and training to hospital staff.
- Extend invitations to representatives from Level I and Level II birthing hospitals to join the IMMRP.
- Infants with a failed Critical Congenital Heart Disease (CCHD) not be discharged without an echocardiogram or transferred to another hospital that can perform an echocardiogram.
- Policy be developed to refer all preterm labor cases to facilities equipped to handle premature infants.
- Maternal mortality cases be able to request CPS information.
- Educate homeless shelters regarding safe sleeping environments for infants.
- Promotion of safe sleep messaging particularly with fathers and other infant caregivers. Review with pediatricians and obstetrics safe sleep messaging with new/expectant parents.
- Additional training on APGAR scoring and timing of death.
- Public service announcement regarding safe sleep guidelines.
- Training Level I and Level II hospitals on when to call a higher level bedside neonatal intensive care unit (NICU) support and developing a NICU telehealth program for smaller community hospitals.
- CPS safety plans with safe sleep, in-home teaching.
- Infant is rooming in with mother at facility after delivery, stress safe sleep guidelines, train staff to recognize impaired caretakers to ascertain who may be committing criminal activity on hospital property and empower staff to call security.
- Early intervention in the home for support and education, quick follow-up for concerns of neglect.
- CPS or other early intervention home visit within a week of delivery and close follow-up to assure safety.
- Training for Level I hospital staff, pediatricians, and emergency departments about APGARs, intubation, when to call for appropriate transfer to higher level of care for mother or for NICU team to be present for impending birth.
- Follow protocol when suspicious deaths are referred to the DHHR's Medical Examiner so the scene can be visited and the family interviewed in a timely manner.
- Creating a subcommittee regarding sleep related deaths.
- Proposed Physician Consultant to review infant cases to promote identification of trends and possible interventions to reduce infant mortalities and assist DHHR's Office of Maternal, Child and Family Health.
- Information that mothers receive is explained at the mother's level of understanding, which may include verbal, written, and video formats.

- Provide options for infant and maternal cases to be received in hard copy or electronic versions.
- DHHR's State Health Officer and Commissioner of the Bureau for Public Health to recommend the IMMRP law be modified to permit cases be identifiable and additional details be shared with IMMRP members.
- IMMRP members receive cases in advance of meeting to have adequate time to review cases and be able to indicate specific cases they would like to discuss by sending an email.
- Obtain out-of-state records for infants who are delivered or expired out-of-state and mothers who expired out of state.
- Request the Governor to advocate with out-of-state governmental entities to commit to improved inter-jurisdictional data sharing.

UNINTENTIONAL PHARMACEUTICAL DRUG OVERDOSE FATALITY REVIEW PANEL

Overview

The Unintentional Pharmaceutical Drug Overdose Fatality Review Panel (UPDORP) is responsible for reviewing and analyzing all deaths occurring within the State of West Virginia where the cause of death was determined to be due to unintentional pharmaceutical drug overdose, specifically excluding the death of persons suffering from a mortal disease or instances where the manner of the overdose death was suicide.

The UPDORP is required to ascertain and document trends, patterns and risk factors related to unintentional pharmaceutical drug overdose fatalities in the state which includes patterns related to the sale and distribution of pharmaceutical prescriptions by those otherwise licensed to provide said prescription. The fundamental objective of the UPDORP is to develop and implement standards for the uniform and consistent reporting of unintentional pharmaceutical drug overdose deaths by law enforcement or other emergency service responders and provide statistical information and analysis regarding the cause of unintentional pharmaceutical drug overdose fatalities.

Membership

According to legislative rule, UPDORP operates under the auspices of DHHR's Office of the Chief Medical Examiner (OCME), with the state Chief Medical Examiner (or designee) acting as the chair of the panel responsible for calling and coordinating all meetings. Other mandated members of the panel include:

- Director of the West Virginia Board of Pharmacy (or designee);
- Commissioner of DHHR's Bureau for Public Health (or designee);
- Director of DHHR's Division of Vital Statistics (or designee);
- Superintendent of the West Virginia State Police (or designee);
- One physician nominated by the West Virginia State Medical Association;
- One registered nurse nominated by the West Virginia Nurses Association;
- One doctor of osteopathy nominated by the West Virginia Society of Osteopathic Medicine;
- One licensed physician or doctor of osteopathy who practices pain management as a principal part of his or her practice;
- One doctor of pharmacy with a background in prescription drug abuse and diversion selected by the West Virginia Pharmacists Association;
- One licensed counselor selected by the West Virginia Association of Alcoholism and Drug Abuse Counselors;
- One representative of the United States Drug Enforcement Administration;
- One prosecuting attorney selected by the West Virginia Prosecuting Attorneys Institute;
- A person who is considered an expert in bioethics training;
- One licensed dentist recommended by the West Virginia Dental Association; and
- Any additional persons the chairperson of the panel determines is needed in the review and consideration of a particular case.

Findings

Even though DVFRP, CFRP and IMMRP have continued to operate within the scope of the law, as of this report, UPDORP has not been activated.