Overdose Poisoning Deaths to Children in Virginia, 2009-2013

Full Report

A report from the

VIRGINIA STATE CHILD FATALITY REVIEW TEAM

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OVERDOSE POISONING DEATHS TO CHILDREN IN VIRGINIA

MISSION STATEMENT
As an interdisciplinary team, we review and analyze sudden, violent, or unnatural deaths of children so that strategies can be recommended to reduce the number of preventable child deaths in Virginia.

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EXECUTIVE SUMMARY

The Virginia State Child Fatality Review Team was established by the General Assembly in 1994 as a multidisciplinary public health effort to understand why infants and children die. Through these reviews, the Team identifies gaps in laws, policies, and programs designed to keep children safe and healthy; and develops recommendations to address these gaps, to prevent similar deaths in the future, and to improve child death investigations in the state. For this report, the Team reviewed cases of overdose poison deaths to infants and children up to age 17 and occurring in Virginia for the five year period between 2009 and 2013. Through this examination, Team members sought to answer this question: how is the overdose problem - now described by the Centers for Disease Control and Prevention (CDC) as a public health epidemic – impacting infants and children and their families in Virginia? Which children are at risk, where are they at risk, how are they at risk, and what can be done to further promote health and safety in their lives?

To set the stage for this review: both prescription opioid sales and drug overdose deaths have nearly quadrupled in the United States (U.S.) since 1999. Poisoning is now the overall leading cause of injury death in the nation.\(^1\) Poisoning deaths result from an intentional or unintentional overdose due to the ingestion, administration, or misuse of prescription or illicit drugs, over-the-counter medications, or household items not meant for human consumption such as cleaning products or batteries. The over-prescribing of controlled substances, overuse of medications, and subsequent rise in the use of heroin has made poisoning a significant threat to public health. As a result, the CDC declared that drug overdoses had reached epidemic levels.\(^2\)

Unfortunately, this epidemic has not spared citizens of the Commonwealth. In 2014, drug overdoses became the most common cause of accidental death in Virginia, surpassing deaths from motor vehicle collisions.\(^3\) Virginia was one of eleven states where the drug overdose death rate

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increased significantly from 2013 to 2014 – a 14.7% increase in one year.\textsuperscript{4} In September 2014, Governor Terry McAuliffe established the Governor’s Task Force on Prescription Drug and Heroin Abuse to address these issues in Virginia, and at the same time, the Team began its comprehensive review of child poisoning deaths.

Within the five year timeframe of the State Child Fatality Review Team’s focus on these overdose deaths, 41 infants, young children, and adolescents died as a result of poisoning in Virginia. This represents approximately 8 child deaths from poisoning each year. After reviewing the circumstances of child overdose fatalities, the Team identified two distinct child populations at risk: (1) teenagers who died as a result of suicidal or accidental drug overdose, and (2) infants and young children age six and under who died after unintentionally ingesting a fatal substance when left unsupervised, or after a caregiver administered medication to manage the child’s behavior or sleeplessness. Throughout the review period, no children between ages seven and twelve died from poisoning. Prescription drugs were identified as the main contributor to child poisoning deaths, causing or contributing to more than two-thirds of these overdoses. The findings, conclusions and recommendations from the Team’s review are presented in the following report. Key findings are listed below.

\textbf{Key Findings on Child Overdose Deaths in Virginia}

I. Teenagers

- Nearly two-thirds of child overdose victims were teenagers between the ages of 13 and 17. These adolescents were most commonly male (54%) and white (89%). Their deaths were typically attributed to accidental circumstances (65%) or to suicide (27%). Teenagers most at risk for an overdose death lived in the Southwest (1.38 per 100,000) or Northwest (1.11 per 100,000) Health Planning Regions of Virginia. See Appendix C for a map outlining Virginia’s five Health Planning Regions.

EXECUTIVE SUMMARY

- Almost one-half of teenagers had a history of misusing prescription medications. Drugs of abuse were most often hydrocodone and oxycodone, followed by alprazolam (Xanax), morphine, clonazepam (Klonopin), and methadone.

- Nearly three-quarters of adolescents had a history of illicit substance use (73%) that mainly involved marijuana use (69%) followed by heroin, MDMA/ecstasy, cocaine, inhalant (huffing), Lysergic Acid Diethylamide (LSD), and methamphetamine.

- About three-fourths of teens had a diagnosed mental or behavioral health condition at the time of their death or in their past. Diagnoses included depression, Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder (ADD/ADHD), anxiety, and Oppositional Defiant Disorder (ODD). More than one-half of these teens had received some form of treatment in their past. Treatment was typically with medication and did not involve counseling or therapy.

- While mental health disorders and substance misuse were frequently co-occurring conditions, coordinated and concurrent treatment for both was rarely provided.

- Adolescents often had prior suicidal ideations (46%) and at least one prior suicide attempt (31%). Females constituted the vast majority of those with prior suicidal ideations (71%) and suicide attempts (88%).

- Most of the teenagers had troubled lives, reflected by prior contacts with law enforcement and/or the juvenile justice system. School records revealed a history of poor attendance and performance, disciplinary issues, suspensions and expulsions. They grew up in substance abusing families, witnessed or experienced domestic violence at home, and were described as having serious interpersonal conflicts with family and friends.

II. Young Children

- Infants and young children up to age seven represented 37% of all child victims from overdose poisoning.

- These young children were more often male (60%) than female. Rates per 100,000 suggest that black children are at higher risk for such deaths (.58) when compared with white (.20) or Asian children (.27). Their deaths were from undetermined circumstances (47%), from accidental
EXECUTIVE SUMMARY

ingestions, (40%), or from intentional homicidal poisonings (13%). Like teenagers, young children in the Southwest Health Planning Region were at highest risk for an overdose death (.98).

- Poisonings among infants and young children were caused by caregiver neglect, by inappropriate and unsafe storage of medications and household products, and by caregivers administering incorrect medications and/or dosages of medications.
- In 53% of cases, the child’s caregiver or caregivers had a history of substance misuse. Substance misuse often impaired caregivers’ ability to appropriately supervise the child and keep them safe from harm.
- Toddlers have an innate curiosity that prompts them to put objects into their mouths. Given this tendency, inadequate caregiver supervision and inappropriate storage of fatal substances, 47% of children under age 7 died from ingesting a poisonous substance that was often mistaken for candy or a drink.

III. Children of All Ages

- Prescription medications caused or contributed to more child deaths than any other substance (68%). More specifically, methadone and oxycodone were detected in more deaths than any other substances, causing or contributing to six deaths each. Morphine was the second most common substance detected, accounting for five non-heroine deaths. Diphenhydramine (Benadryl) and fentanyl caused or contributed to four deaths each, and fluoxetine (Prozac) and hydrocodone were each responsible for three deaths.
- Familial substance misuse was prevalent throughout the review. One-half of biological parents had substance misuse histories. Particularly among teenagers, parents or caregivers facilitated the child’s substance misuse by providing drugs or using drugs with their children.
- Some or all of the fatal substances were obtained from the child’s own home in nearly three-fourths of cases. Children were most likely to ingest the fatal substance(s) at their own home (85%).
- The majority of children grew up in poor families which were unstable and chaotic. Over one-half were receiving Medicaid, indicating families lived at or below poverty level.
• After careful review and discussion of each child poisoning overdose case, the Team concluded that close to three in four children were inappropriately supervised or supervised by an incapacitated caregiver at the time of the fatal incident (73%).

• The Team determined that 93% of child poisoning deaths reviewed were preventable. Safe storage of medication and other hazardous household materials is critical to infant and child safety, including teenagers. The other critical factors needed are readily available points of intervention that can assist in identifying children at risk; creating an efficient route to get children, parents and caregivers in touch with services and treatment; and providing a robust and responsive mental and behavioral health system with the capacity to comprehensively respond to Virginia’s overdose crisis.

• To these ends, the State Child Fatality Review Team offers the following recommendations to strengthen Virginia’s capacity to respond to drug use and misuse.
TEAM RECOMMENDATIONS

The Virginia State Child Fatality Review Team carefully reviewed all child poisoning cases over a five-year time period, amassed data garnered throughout the review, and analyzed the data to obtain an accurate, comprehensive picture of child poisoning deaths in the Commonwealth. Following careful consideration of the compiled evidence, the State Child Fatality Review Team presents the following recommendations to improve Virginia’s response to substance misuse among caregivers and children, to promote and strengthen communication and collaboration among state and local agencies providing services to families, and to enhance child death investigative practices throughout Virginia. The Team hopes the information published in this report along with its recommendations will be used in the continued effort to prevent the premature death of Virginia’s children.

1. The State Child Fatality Review Team supports the position of Virginia’s State Drug Court Advisory Council encouraging all Virginia localities to establish family drug courts. In his role as Chair of the Advisory Council, the Chief Justice of the Supreme Court of Virginia should enable the training of judges about the value of drug courts and work with the Governor and the General Assembly to expand funding for these community based initiatives.

2. The Department of Behavioral Health and Developmental Services should require all programs that utilize opioid replacement treatment to (1) provide all patients with information about the risks of overdose to themselves and to infants and children in their homes and (2) send patients home with a prescription for naloxone. Educational materials should include the importance of safe storage for all medication, the value of lock boxes for safeguarding medication around children, information about the short-acting nature of naloxone for reversing overdose, and the urgency of calling 9-1-1 because naloxone is short-acting and requires further medical treatment after administration.

3. The Departments of Behavioral Health and Developmental Services (DBHDS), Social Services (DSS) and Health (VDH) should work together to develop guidelines and training for implementing a multidisciplinary Plan of Safe Care for infants born and identified as being affected by parental substance abuse or withdrawal symptoms. The plan should address the
safety and well-being of the infant following release from the care of a health care provider, as well as the health of the affected caregiver. DBHDS should lead in addressing the substance use disorder and mental health treatment of the caregiver. DSS should address other needed services for the caregiver in terms of child safety. DSS should also address screening, safety, risk assessment, and referral to early intervention services for infants and children born substance exposed. In addition, DSS should monitor child safety and service compliance. Any subsequent valid report to CPS regarding an infant or child identified as substance exposed at birth should receive an R1 (24 hour) response from the local Child Protective Services program.

4. Amend and reenact §§ 63.2-1505 and 63.2-1509 of the Code of Virginia relating to investigations by local departments of social services and mandated reporting requirements. Amendments to § 63.2-1505 would permit local departments to conduct a child abuse and neglect investigation when an infant is suspected to have been born substance exposed or dependent and would remove the statutory exemption from such investigations when mothers sought counseling or treatment for their drug abuse while pregnant. Amendments to § 63.2-1509 would clarify conditions where a reason to suspect that a child is abused or neglected involves substance abuse. (See Appendix B for a full text of the proposed changes to the Code of Virginia.)

5. Pursuant to § 37.2-505 of the Code of Virginia, Community Services Boards should provide health care providers and health care facilities in their communities with a resource list of providers and services to facilitate screening, assessment, referral and treatment of their drug misusing patients. Resource lists should be updated on a regular basis to support timely and appropriate referrals.

6. The Virginia Hospital and Healthcare Association should collaborate with representatives from the Virginia Chapter of the American Academy of Pediatrics, the Virginia College of Emergency Physicians, forensic nurse examiners, the National Association of Social Workers of Virginia (including hospital based social workers), and the Virginia Emergency Nurses Association to establish policies and protocols whereby children and adolescents presenting for treatment in a
hospital for a substance overdose, testing positive on a drug screen, or presenting under the influence of a controlled substance, shall be provided a list of community resources for assistance with assessment and treatment. A list of local resources and services including Community Services Boards will be incorporated into the child’s written discharge plan and will be communicated clearly with the child and his or her family prior to discharge.

7. The Virginia Chapter of the American Academy of Pediatricians should establish policies and protocols whereby child and adolescent patients presenting with a substance abuse problem, testing positive on a drug screen, or presenting under the influence of a controlled substance, shall be given a list of local resources and services including Community Services Boards where the child and his or her family can receive further assessment and treatment.

8. Amend and reenact § 22.1-277.2:1 A of the Code of Virginia relating to the disciplinary authority of school boards under certain circumstances to require students found in possession or under the influence of drugs or alcohol on school property, on a school bus, or at a school-sponsored activity to undergo evaluation and, if recommended, treatment. (See Appendix A for a full text of the proposed change to the Code of Virginia.)

9. Working with the Virginia Hospital and Healthcare Association, the Virginia College of Emergency Physicians should ensure that records from Emergency Department visits are routinely shared with primary health care providers.

10. Virginia’s health insurance providers and the Virginia Department of Medical Assistance Services should reimburse providers for assessment and treatment of drug abusing clients as required by insurance parity policy and law.

11. Early Impact Virginia should develop on-line training modules to assist home visitor staff in recognizing risk factors and red flags for substance misuse, making referrals for assessment and treatment, and talking with families about substance use and misuse.
12. The Virginia Department of Health should partner with the Virginia Pharmacists Association to develop educational materials about safe storage of medications in homes with children and adolescents. These materials would be provided to parents and caregivers as the medications are being dispensed.

13. The Virginia Department of Health and the Virginia Office of the Attorney General should partner to distribute medication lock boxes to families through Virginia’s home visiting programs.

14. The Virginia Department of Health should develop an injury prevention curriculum for use in prenatal classes at Virginia hospitals. The curriculum should use the findings from this review and emphasize common sense approaches to safe storage of medications, poisons, and other potentially harmful substances in the home.

15. The Virginia Department of Criminal Justice Services should develop a law enforcement model policy on the investigation of unexpected infant and child deaths.

16. The Office of the Chief Medical Examiner should work with the Virginia Hospital and Healthcare Association to explore the feasibility of establishing policies, procedures and protocols whereby hospitals keep and preserve patient blood samples taken at admission in cases of suspicious or critical illness and death. These specimens are critical to understanding causes of death and may be used as evidence for criminal wrongdoing. Any new policies and procedures should be integrated with hospital information technology systems to ensure that physicians are flagging cases relevant for this specimen retention when entering initial orders in the case.

17. In its role of promoter of consumer protection, the Consumer Product Safety Commission should develop and implement new laws to address children’s access to medications and poisons, including medication packaging standards that are fully child resistant.
18. In the interest of providing safer packaging for all medications, poisons, and other potentially deadly substances in the home, Virginia’s Poison Centers should report case specific information to the Consumer Product Safety Commission when the packaging of a fatal substance was a factor in the death.

19. The State Child Fatality Review Team recognizes the valuable role Virginia’s Poison Centers play in intervention and education. These Centers are critical resources for both our medical providers and our communities. Because they minimize inefficient uses of emergency departments, the efforts of Poison Centers reflect significant cost savings to Virginia’s hospitals, insurance providers and citizens. The Governor should review the effectiveness of Virginia’s Poison Center, with an eye to expanding their activities and capacities with additional funding and staff support. This is particularly important for their prevention training and responses to families and others in crisis. Increased support will allow Poison Centers to ensure that messages about the risks of harm or death from poisons, medications, or abused substances are routine, pervasive and consistent across the Commonwealth.
INTRODUCTION

Deaths due to overdose and prescription opioid sales have both nearly quadrupled in the United States (U.S.) since 1999, making prescription drug misuse one of the nation’s most urgent public health threats. Overdose deaths are now the number one injury death in the U.S., exceeding firearm and motor vehicle deaths since 2009. The marked increase in overdose deaths triggered the Centers for Disease Control and Prevention (CDC) to declare that drug overdoses had reached epidemic proportions. This declaration led to the first Surgeon General’s report on alcohol, drugs, and health. The report notes that in addition to being a public health crisis, substance misuse presents a significant economic cost. Substance misuse costs the U.S. an estimated $400 billion each year due to factors related to health care costs, law enforcement and criminal justice expenses, and lost workplace productivity largely due to premature mortality.

Regrettably, this epidemic permeates the Commonwealth where drug overdoses became the leading cause of unnatural death in Virginia in 2014. Figure 1 illustrates the rise in overdose deaths over the past 18 years in Virginia. In the first nine months of 2016, the number of emergency room visits due to heroin overdose increased by 89%, and in the first six months, drug overdoses of all types increased by 35% compared to the same time frames in 2015. Further consequences of this epidemic include the growing prevalence of hepatitis C and HIV mostly from intravenous drug use. Consequently, in November 2016, the Virginia State Health Commissioner declared Virginia’s opioid addiction crisis a “Public Health Emergency”.

Due to the overwhelming increase of overdose deaths in the nation and the Commonwealth, the Virginia State Child Fatality Review Team, hereafter referred to as the Team, sought to observe how this epidemic affects children in Virginia. The interdisciplinary Team comprehensively reviewed all deaths due to poisoning for children aged 0-17 between the years 2009 and 2013.

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INTRODUCTION

The Team reviewed cases in an effort to better understand the circumstances surrounding the deaths, to distinguish the characteristics of the children and their caregivers, to develop prevention strategies, and to design recommendations for improved system response to substance misuse. Through the review, the Team found that children who died from poisoning fell into two populations. First, teenagers aged 13 to 17 comprised the majority of child poisoning fatalities. Teenagers primarily died as a result of suicidal or accidental drug overdose. Second, infants and young children age six and younger died from unknowingly ingesting a fatal substance when left unsupervised or from a caregiver administering medication to manage the child’s behavior or sleep. No poisoning deaths occurred to children aged 7 to 12 during the review period. Although child overdose deaths were considered a relatively rare event, totaling 41 deaths over the five year period, the Team determined 38 of the 41 cases could have reasonably been prevented. The remainder of this report details the results and recommendations derived from the review. The Team hopes the information included can be used to reduce the number of child poisoning fatalities in the future as well as improve the services and support programs families receive when working to overcome addiction.

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8 Data Source: Virginia Medical Examiner Data System. Virginia Department of Health, Office of the Chief Medical Examiner.
INTRODUCTION

Organization of the Report

The report is organized into five sections. An Executive Summary is provided as an overview of the State Child Fatality Review Team’s review as well as the key findings garnered. Section I presents the Team’s consensus recommendations for prevention, intervention, and improved death investigation. Section II offers information on poisonings among teenagers aged 13-17. Section III focuses on the other distinct population noted in this review: infants and young children aged 0-6. Section IV outlines contacts with services the child and his/her family encountered during the child’s life. Section V describes characteristics of poisoning death investigations.
Of the 41 poisoning cases reviewed by Virginia’s State Child Fatality Review Team, 26 were teenagers between the ages of 13 and 17 (63%) indicating that teenagers represented the most at-risk group among all children. Adolescence signifies a critical at-risk period for the initiation of substance use and misuse that often extends into adulthood due to the particularly potent effects of substances on the developing child’s brain. In 2013, one-quarter of U.S. teens reported misusing or abusing prescription medications – a 33% increase over a five year period. Despite a slight dip in the number of teen overdoses in Virginia in 2012, teen overdose deaths have been steadily rising since 2009 with more than one-fourth of deaths occurring in 2013, the final year of the Team’s review. Although young adults aged 18 to 26 sustain the highest rates of overdose deaths, the trend of teen overdoses in Virginia closely mirrors that of the adult overdose population. In spite of the seemingly irreversible overdose crisis facing the nation, the Team determined that 100% of teen overdose fatalities in its review were probably or definitely preventable.

Who is at risk for teen overdose deaths?

Nearly two-thirds of child overdose deaths reviewed by the Team were among teenagers 13-17 years of age. More than half of all overdose fatalities in the five year period were among 15 to 17 year olds. The majority of teens were white, non-Hispanic males. See Table 1. As shown in Figure 2, the Western regions of Virginia reported teen overdose death rates markedly higher than all other regions of Virginia. These rates remain consistent over time and reflect the nationwide trend that the rate of overdose deaths in rural areas is outpacing the rate in large urban areas. In contrast, Central Virginia’s teen overdose death rate was considerably lower than any other region in the Commonwealth.

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### Table 1: Overview of Child Deaths from Poisoning, Ages 0-17, Virginia, 2009-2013 (N=41)

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<td>-</td>
<td>-</td>
<td>22</td>
<td>84.6</td>
<td>1.41</td>
<td>22</td>
<td>53.7</td>
<td>1.41</td>
</tr>
</tbody>
</table>

| **Sex**             |            |             |          |            |             |          |            |             |          |
| Male                | 9          | 60.0        | 0.34     | 14         | 53.8        | 0.67     | 23         | 56.1        | 0.49     |
| Female              | 6          | 40.0        | 0.24     | 12         | 46.2        | 0.60     | 18         | 43.9        | 0.40     |

| **Race**            |            |             |          |            |             |          |            |             |          |
| White               | 7          | 46.7        | 0.20     | 23         | 88.5        | 0.81     | 30         | 73.2        | 0.47     |
| Black               | 7          | 46.7        | 0.58     | 3          | 11.5        | 0.30     | 10         | 24.4        | 0.45     |
| Asian               | 1          | 6.7         | 0.27     | -          | -           | -        | 1          | 2.4         | 0.16     |

| **Ethnicity**       |            |             |          |            |             |          |            |             |          |
| Hispanic            | -          | -           | -        | 1          | 3.8         | 0.25     | 1          | 2.4         | 0.09     |
| Not Hispanic        | 15         | 100         | 0.33     | 25         | 96.2        | 0.67     | 40         | 97.6        | 0.49     |

| **Year of Death**   |            |             |          |            |             |          |            |             |          |
| 2009                | 1          | 6.7         | 0.10     | 4          | 15.4        | 0.50     | 5          | 12.2        | 0.27     |
| 2010                | 2          | 13.3        | 0.20     | 6          | 23.1        | 0.72     | 8          | 18.5        | 0.43     |
| 2011                | 7          | 46.7        | 0.68     | 6          | 23.1        | 0.72     | 13         | 31.7        | 0.70     |
| 2012                | 1          | 6.7         | 0.10     | 3          | 11.5        | 0.36     | 4          | 9.8         | 0.22     |
| 2013                | 4          | 26.7        | 0.39     | 7          | 26.9        | 0.84     | 11         | 26.8        | 0.59     |

| **Manner of Death** |            |             |          |            |             |          |            |             |          |
| Accident            | 6          | 40.0        | 0.12     | 17         | 65.4        | 0.41     | 23         | 56.1        | 0.25     |
| Suicide             | -          | -           | -        | 7          | 26.9        | 0.17     | 7          | 17.1        | 0.08     |
| Homicide            | 2          | 13.3        | 0.04     | -          | -           | -        | 2          | 4.9         | 0.02     |
| Undetermined        | 7          | 46.7        | 0.14     | 2          | 7.7         | 0.05     | 9          | 22.0        | 0.10     |

| **Health Planning Region** |            |             |          |            |             |          |            |             |          |
| Central              | 3          | 20.0        | 0.40     | 2          | 7.7         | 0.35     | 5          | 12.2        | 0.38     |
| Eastern              | 3          | 20.0        | 0.31     | 6          | 23.1        | 0.80     | 9          | 22.0        | 0.53     |
| Northern             | 1          | 6.7         | 0.07     | 5          | 19.2        | 0.50     | 6          | 14.6        | 0.25     |
| Northwest            | 1          | 6.7         | 0.16     | 6          | 23.1        | 1.11     | 7          | 17.1        | 0.60     |
| Southwest            | 7          | 46.7        | 1.19     | 7          | 26.9        | 1.38     | 14         | 34.1        | 0.65     |

| **OCME District**   |            |             |          |            |             |          |            |             |          |
| Central             | 4          | 26.7        | 0.37     | 6          | 23.1        | 0.65     | 10         | 24.4        | 0.50     |
| Northern            | 1          | 6.7         | 0.06     | 7          | 26.9        | 0.60     | 8          | 19.5        | 0.29     |
| Tidewater           | 3          | 20.0        | 0.35     | 4          | 15.4        | 0.60     | 7          | 17.1        | 0.46     |
| Western             | 7          | 46.7        | 0.98     | 9          | 34.6        | 1.47     | 16         | 39.0        | 1.20     |

---

13 All rates are calculated per 100,000 persons in the population.
Western Virginia saw the highest teen overdose death rates in the Commonwealth. Figure 2: Teen Overdose Death Rates in Virginia by Health Planning Region, Age 13-17, 2009-2013 (N=26)

How and why do teens overdose?

The majority of teen overdose fatalities in Virginia were from accidental ingestions (65%), suicides (27%), or undetermined\(^\text{14}\) in manner (8%). Most suicide overdose deaths occurred in the Northern and Central regions of Virginia, while accidental overdoses comprised the majority of teen overdose fatalities in all other regions.

This review revealed clear trends in teen overdose deaths: long histories of substance misuse; prevalent mental and behavioral health conditions; and pervasive family instability. Fatal ingestions occurred primarily in the teen’s home (81%) followed by a friend’s home (12%) or outside/at another location (8%). Although the majority of teens were at home alone when they died, about one in four teens went to a party or were using substances with friends the night prior to their death. Peers appeared to have significantly influenced teen substance use. Many of the teens who died were surrounded by friends, significant others, and siblings who also misused substances.

\(^\text{14}\) An undetermined death is one where there is insufficient information about the circumstances of the death to determine manner with certainty; or, where two manners of death are plausible – accidental overdose and suicidal overdose, for example – and the death investigation cannot distinguish between the two manners.
The vast majority of teens had histories of substance use and mental health difficulties that began in early adolescence. Young women were more likely to be diagnosed with a mental health disorder and to receive treatment compared to young men. Among the 12 female decedents, 11 had been diagnosed with a mental or behavioral health condition, compared to eight of the 14 male decedents. Of those diagnosed, the most common conditions for both males and females were depression (68%), Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder (ADD/ADHD) (53%), anxiety (42%), and Oppositional Defiant Disorder (ODD) (26%). In total, these represented 49 diagnoses among the 19 teenagers who had been diagnosed with a mental health condition. More than three-fourths of decedents with depression were female, as were 80% of those with ODD, and 100% of those with bipolar disorder. Fourteen of the 19 decedents with mental or behavioral health diagnoses received treatment, 71% of which were females. The type of mental health treatment the child received included outpatient services only (36%), both inpatient and outpatient services (36%), and inpatient services only (29%). In most cases, mental health treatment consisted of medication-centered treatment without corresponding counseling services.

Twenty-two of 26 teens (85%) demonstrated a history of substance misuse consisting of illicit drugs (73%), alcohol (69%), and prescription medications (40%). The majority of teens misused more than one substance. The Team noted a substantial disparity between the number of teens with substance misuse histories and the number who received treatment, signifying a perilous gap between Virginia teens’ needs and the services they receive (Figure 3).
CHARACTERISTICS OF TEENAGE DECEDENTS

Figure 3: Substance Misuse and Mental Health among Teen Overdose Decedents in Virginia, Ages 13-17, 2009-2013 (N=26)

<table>
<thead>
<tr>
<th>Substance Misuse</th>
<th>Substance misuse history</th>
<th>85%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Substance dependence diagnosis</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>Prior substance misuse treatment</td>
<td>27%</td>
</tr>
<tr>
<td>Mental Health</td>
<td>Current mental health diagnosis</td>
<td>73%</td>
</tr>
<tr>
<td></td>
<td>Prior mental health treatment</td>
<td>54%</td>
</tr>
</tbody>
</table>

The Team also noted that while mental health disorders and substance misuse frequently coincided, synchronized treatment did not. The majority of teens with a mental health diagnosis also misused substances, but just one-third of teens were diagnosed with concurrent mental health and substance dependence disorders. Is substance dependence underdiagnosed among teens? The majority of adults with a substance use disorder initiated substance use during adolescence but do not meet the criteria for a substance use disorder until their early 20s.15 This highlights the key role that early recognition, assessment and referral for treatment play in addressing and interrupting the drug addiction epidemic. Given similar percentages of substance misuse and mental illness among teens, the vast difference in the number who received treatment for substance misuse compared to mental illness further emphasizes the lack of parity between the two diagnoses (Figure 3). Lack of parity can have harmful effects due to evidence suggesting that mental illness places teens at higher risk for developing a substance use disorder, just as substance use exacerbates symptoms of mental illness.16 According to the American Academy of Pediatrics, lack of care coordination results in poor health outcomes and has other detrimental effects on children including decreases in referrals, additional barriers to care, higher

health care costs as well as increases in school absences and emergency department visits. Children are in need of coordinated, comprehensive, family-centered care especially when they have special health care needs.

The Team was also struck by the circumstances surrounding many of the teen fatalities in this review. In each case reviewed, the Team worked to identify the catalyzing forces or root causes that lead teens to misuse substances. Members found a precipitating event occurred within 24 hours of the teen’s death in nearly one in four cases, and that almost one in three teens experienced a traumatic event at some point during their adolescence that contributed to their substance use. Events included the premature death of a friend or family member, abuse or neglect by a caregiver, moving, problems at school, or breaking up with a significant other. Two-thirds of teens experienced significant tension in their home environment that involved strained parental relationships, domestic violence, and abuse or neglect. Many teens noted these as reasons for their substance misuse. Four teens used cutting near the time of their death in an attempt to gain the attention of their caregiver. Similarly, almost one-half of teens had prior suicide ideations and nearly one-third had a prior suicide attempt. Females constituted the overwhelming majority of teens who had both suicide ideations and suicide attempts representing a particularly susceptible population at high risk of subsequent overdose.

Which substances caused or contributed to teen overdose deaths?

Prescription medications caused or contributed to more teen overdose fatalities than any other substance. Among prescription medications, narcotics like morphine, oxycodone, and hydrocodone caused the majority of deaths. These were followed by anti-depressants, mainly fluoxetine, which caused about one-fourth of deaths (Figure 4). Mixed drug categories were

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18 Opioid medications used to treat moderate to severe pain (e.g., morphine, oxycodone, and hydrocodone).

19 Selective Serotonin Reuptake Inhibitor used to treat depression, obsessive-compulsive disorder (OCD), bulimia, nervous, and panic disorders (e.g., Prozac and Sarafem).
the second main contributor to teen overdose deaths (15%), including over-the-counter (OTC) medications such as diphenhydramine\textsuperscript{20}, chlorpheniramine\textsuperscript{21}, and dextromethorphan\textsuperscript{22} that were ingested with other substances to cause four deaths. Although nearly three-fourths of teens had a history of illicit drug use, illicit drugs caused or contributed to only one death. The four inhalant deaths in the review were caused by each of the following: an air duster, products of combustion, chlorodifluoromethane\textsuperscript{23}, and nitrous oxide\textsuperscript{24}.

The Team noted that a considerable number of teens regularly abused at least one of the substances found in his or her system at their death (39%). In more than one-half of the cases, teens obtained the fatal substance from their home; the fatal poison was stored in an open, unlocked area in 80% of those cases. How were these poisons obtained? Of all the cases where the source of the fatal poison was identified, some or all of the fatal drugs were prescribed to the teen (37%), prescribed to a parent or caregiver (33%), or prescribed to another person in the home (12%). Other substances were purchased illegally (25%) or stolen (23%). These findings led the Team to conclude that safe storage of medications is crucial to preventing poisoning deaths among teens.

Most teen overdose deaths were caused by prescription drugs, mainly narcotics. Figure 4: Common Fatal Substances Ingested in Teen Overdose Deaths in Virginia, Ages 13-17, 2009-2013 (N=26)

<table>
<thead>
<tr>
<th>Substance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>27%</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>19%</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>15%</td>
</tr>
<tr>
<td>Diphenhydramine</td>
<td>12%</td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>12%</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>12%</td>
</tr>
</tbody>
</table>

\textsuperscript{20} Used to treat common colds, allergies, nausea, motion sickness, asthma, and hives.

\textsuperscript{21} Used to treat common colds, allergies, asthma, and hives.

\textsuperscript{22} Used to suppress coughs.

\textsuperscript{23} Colorless gas commonly used as a propellant and refrigerant, better known as HFC-22, or R-22.

\textsuperscript{24} Colorless and odorless non-flammable gas commonly known as laughing gas or nitrous.
CHARACTERISTICS OF TEENAGE DECEDEENTS

Are there regional differences in Virginia in the types of drugs causing and contributing to teen overdose deaths? Analysis showed prescription drugs were a noteworthy contributor to fatalities in all regions (Figure 5). In fact, prescription drugs caused the largest number of deaths in all regions of Virginia except Northern, where mixed drug categories were the main contributor. Prescription drugs also caused every teen overdose death in Central and Southwest Virginia. Illicit drugs caused or contributed to deaths in the Eastern region only, while inhalants caused deaths in the Northwest and Eastern regions. Teen overdose deaths in the Eastern region suggested the widest array of ingested fatal substances.

Prescription drugs predominate among teen overdose deaths throughout Virginia.

Figure 5: Number of Teen Overdose Deaths in Virginia by Drug Category and Health Planning Region, Ages 13-17, 2009-2013 (N=26)

How do teenagers’ home environments influence substance use?

In order to understand the pathway that led to fatal ingestion, the State Child Fatality Review Team sought to understand the teenagers’ households and family lives. As Table 2 suggests, most teens were being supervised by their mother and/or father at the time of the fatal ingestion. In most cases, their biological parents were divorced, separated or never married. Many of the children grew up in poor families who depended on Medicaid, Social Security Disability and/or Temporary Assistance for Needy Families (TANF) benefits for support.
More importantly, the majority of teens grew up in substance misusing households with parents and caregivers who also suffered from mental illnesses. One-half of parents had a history of substance misuse. Of these, the majority of these were fathers (54%), mothers (8%), or both parents (39%). Over one-quarter of teens were described as third generation substance misusers, a likely underestimate given that the Team did not have access to all family members’ health records or medical histories. In case after case, the Team identified intergenerational substance misuse that served as a contributing factor to teen substance use and misuse. Substances were easily available to the children and substance use was acceptable within the household. The Team recognized that many parents and caregivers directly facilitated their child’s substance use (Figure 6). Nearly one in five caregivers, 19%, had given the teen the drug that led to their death. The Team agreed substance misuse and mental illness made it difficult for caregivers in the review to properly care for and supervise their teenage children. As a result, two-thirds of teens lived in chaotic, unstable home environments that included living without an adult caregiver, in foster care, or moving back-and-forth between and among caregivers. For these reasons, the Team concluded that the teen’s caregiver provided inadequate supervision in 54% of cases.

### Table 2: Selected Characteristics for Caregivers of Teen Overdose Victims in Virginia, 2009-2013 (N=26)

<table>
<thead>
<tr>
<th>Caregiver Characteristics</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary caregiver at time of fatal incident</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>18</td>
<td>69</td>
</tr>
<tr>
<td>Father</td>
<td>12</td>
<td>46</td>
</tr>
<tr>
<td>Grandparent</td>
<td>5</td>
<td>19</td>
</tr>
<tr>
<td>Marital status of biological parents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>11</td>
<td>42</td>
</tr>
<tr>
<td>Married</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td>Separated</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Never married</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Unknown</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Insurance provider</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>11</td>
<td>42</td>
</tr>
<tr>
<td>Private company</td>
<td>11</td>
<td>42</td>
</tr>
<tr>
<td>None/self-pay</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Unknown</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Benefits received</td>
<td>14</td>
<td>54</td>
</tr>
<tr>
<td>Temporary Assistance for Needy Families (TANF)</td>
<td>14</td>
<td>54</td>
</tr>
<tr>
<td>Social Security Disability (SSDI)</td>
<td>6</td>
<td>23</td>
</tr>
</tbody>
</table>
The majority of caregivers were aware of and facilitated their teen’s substance misuse. Figure 6: Percent of Caregiver Substance Abuse and Awareness of Teen Substance Abuse Among Teen Overdose Victims in Virginia, 2009-2013 (N=26)

Caregivers...

- knew about teen’s substance misuse: 77%
- denied the extent of teen’s substance misuse: 31%
- allowed or facilitated teen’s substance use: 42%
- had a history of substance misuse: 58%
- willingly supplied fatal substance to teen: 19%
- received substance misuse treatment: 4%
- of families never received counseling/treatment for their teen’s substance abuse and mental illness: 85%

At the same time that parents and caregivers facilitated substance misuse among teenagers, they minimized its significance, describing instead that the child was just being a teenager. Parents did not seem to recognize or respond to red flags suggesting the larger issue of addiction at hand. The Team noted the need to educate parents on the difference between teens who are mentally ill or misusing substances and those who are going through typical growing pains associated with the teenage years. Parents were often unsure of how to help their child overcome substance use and mental health difficulties. Therefore, the Team acknowledged that even when they received treatment, teens returned to a toxic home environment which undermined the staying power and effectiveness of treatment. Tense familial relationships and intergenerational substance misuse...
CHARACTERISTICS OF TEENAGE DECEDENTS

habitually motivated teens’ return to substance use, yet these root causes were rarely addressed in treatment. The majority of families were not referred to family counseling even though a large number would have benefitted from such services (Figure 7). The Team discussed the need for family counseling to be more widely offered as a way to handle teen substance misuse as well as family conflict. They recognized the importance and need for teenagers and their caregivers to receive consistent, comprehensive substance misuse and mental health treatment in order to ensure a safe home environment for children in Virginia.

**Key risk factors for teen overdose deaths**

Establishing risk factors is a key element of the Team’s public health approach to child fatality review. Understanding risk factors can be used by school personnel, health and mental health care providers, social service personnel, and law enforcement officers to recognize and assess a child’s risk level, make referrals for appropriate services, and ultimately reduce the child overdose death rate. These risk factors can help to ensure that children are referred to effective treatment programs that address all areas of need simultaneously, thereby avoiding fragmented treatment. Through review of research and extensive case evaluation, the Team identified several factors which increase the likelihood of teenage accidental overdose and suicide. See Table 3.

Table 3: Risk Factors for Teenage Overdose in Virginia, Ages 13-17, 2009-2013 (N=26)\(^{25,26}\)

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Description from Team Review</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early initiation of substance misuse</td>
<td>Number of teenagers for whom an age of first use was reported. Age at first use(^{27}) 8 to 13 14 to 16</td>
<td>16</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>38</td>
</tr>
</tbody>
</table>


\(^{27}\) Percentage calculated from the number of teenagers for whom an age of initiation was reported (n=16).
<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Description from Team Review</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early initiation of substance misuse</td>
<td>First drug used[^28]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alcohol</td>
<td>8</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Marijuana</td>
<td>7</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>Tobacco</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Inhalant</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Personal history of mental/behavioral health disorders</td>
<td>Child was diagnosed with a mental or behavioral health disorder (e.g., depression, attention deficit hyperactivity disorder, and anxiety disorder).</td>
<td>19</td>
<td>73</td>
</tr>
<tr>
<td>Family history of mental illness or substance abuse</td>
<td>Parent of decedent child had a substance misuse problem.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Father</td>
<td>13</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Both parents</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Mother</td>
<td>5</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Decedent child’s caretaker (usually a parent) had a substance misuse problem.</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Family history of mental illness or substance abuse</td>
<td>Decedent child’s caretaker (usually a parent) had a substance misuse problem.</td>
<td>11</td>
<td>42</td>
</tr>
<tr>
<td>Lack of parental supervision</td>
<td>State Child Fatality Review Team determined that the teen was not appropriately supervised at the time of the fatal ingestion.</td>
<td>17[^29]</td>
<td>89</td>
</tr>
<tr>
<td>History of abuse or neglect</td>
<td>Child was ever found to be a victim of child abuse or neglect after an investigation by Child Protective Services.</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Exposure to violence, especially in the home</td>
<td>Child witnessed domestic violence in his or her home or family.</td>
<td>10</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Child was victim of domestic violence.</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Child was perpetrator of domestic violence.</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Previous suicide ideations and attempts</td>
<td>Child expressed suicide ideations in the past.</td>
<td>12</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Child made suicide attempts in the past.</td>
<td>8</td>
<td>31</td>
</tr>
<tr>
<td>Poverty</td>
<td>Child’s insurance was Medicaid.</td>
<td>11</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Child’s family received food assistance through SNAP (Supplemental Nutritional Assistance Program).</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Drug availability and accessibility</td>
<td>Some or all of the fatal substance(s) were obtained from the teenager’s own home.</td>
<td>15</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>Evidence of drug use was found in teenager’s bedroom or among teenager’s belongings.</td>
<td>13</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Teenager had a prescription for some or all of the fatal drugs in his or her system at death.</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Prescription medications were properly locked and stored in the home.</td>
<td>2</td>
<td>8</td>
</tr>
</tbody>
</table>

[^28]: More than one substance was initiated at the same age, such as alcohol and tobacco, or alcohol and marijuana.

[^29]: The Team addressed this question in 19 of the cases reviewed, and did not address it in the other seven cases.
## CHARACTERISTICS OF TEENAGE DECEDENTS

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Description from Team Review</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early aggressive behavior</td>
<td>Child was perpetrator of domestic violence.</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Child had record of prior assault and/or battery charges.</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>School requested conference with parents to discuss child’s discipline or behavior issues.</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Low involvement in school and academic difficulties</td>
<td>Teenager was described with disciplinary issues in school.</td>
<td>19</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>Teenager ever had in or out of school suspension.</td>
<td>17</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Teenagers’ average grades were below average or poor.</td>
<td>10</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Teenagers’ grades dropped in months leading to death.</td>
<td>8</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Number of absences exceeded 30 in prior full school year.</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Number of absences exceeded 20 in current school year.</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Social stresses associated with conflict in important interpersonal relationships</td>
<td>Number of cases where interpersonal conflicts were noted between teenager and family or friends.</td>
<td>20</td>
<td>77</td>
</tr>
</tbody>
</table>

30 Information for this estimate comes from a variety of sources: interviews with family members and friends after the death of the teenager, as well as the Team’s record review from schools, and health and mental health providers. Conflicts described sometimes focused on what might be called “typical” teenage problems – arguing with parents about friends, boyfriends, and performance in school. A good number of these conflicts also involved blended families where the decedent lived with a biological parent and a step-parent and step-siblings. In other cases, substance abuse and mental health diagnoses of parents and/or the teenagers led to more sustained and challenging conflicts. This resulted in the filing of petitions for Child in Need of Services (CHINS), placement in foster care, teenagers running away and staying with friends or boyfriends, and orders for the teenagers to seek and comply with treatment. Indeed, many of the teenagers whose deaths were reviewed by the Team grew up in homes with parents with histories of substance abuse and mental health problems. The daily struggles with addiction, mental health, and parenting suggested a perfect storm for conflicts within the household and family. These were often inescapable for the teenagers who died.
In the five year time period of the Team’s review, 41 children between the ages of 0 and 17 were identified; 15 of the deaths were infants and young children under the age of seven (37%). The Team discovered through thorough case review that infant and young child poisoning deaths fell into two distinct categories: (1) those that ingested dangerous medications, drugs, or household materials that were kept in unsafe places or (2) those whose caretakers administered medications or drugs to manage the child’s behavior and sleep. The circumstances of these young children’s deaths and the prevalence of caregiver neglect seen in this part of the review reflected more broadly the profound and rampant overdose epidemic in the U.S. The Team noted that 80% of these fatalities were preventable, and 87% of children were not appropriately supervised at the time leading up to the fatal ingestion.

Many of the decedents were substance exposed infants with mothers suffering from substance use disorders, and the majority of children had parents with substance use disorders and/or mental illnesses which influenced parents’ ability to properly supervise their child. A 2015 Reuters investigation of similar deaths noted that many infants recover from being born drug-dependent. At the same time, their risk of harm is elevated when they are “sent home to families ill-equipped to care for them.”

Although the number of infant and young child overdose deaths is small, it is critical to note the circumstances and caretaker characteristics are parallel to those found in the Team’s previous review of sudden infant deaths due to unsafe sleep environments, which illustrates poisoning is just one of many ways children are affected by drug abuse in Virginia.

**Who is most at risk for infant and child overdose?**

All 15 of the poisoning deaths of young children were to children under the age of seven, and 87% were to infants and toddlers under the age of 5. Sixty percent of the children were male. The numbers of infant and young child overdose deaths were more evenly distributed among races compared to teenage overdose deaths: 47% were white, 47% were black, and 7% were asian. No child was from a Hispanic background. However, rates of poisoning deaths were highest among black children (0.58). See Table 1.

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CHARACTERISTICS OF INFANT AND YOUNG CHILD DECEDENTS

Approximately one-third of the infants and young children were substance exposed infants at birth (33%) indicating a particularly vulnerable population at risk of poisoning.\(^{32}\) In addition to these characteristics, Figure 8 shows that regional differences in infant and young child overdose deaths exist in Virginia. The Southwest region had an infant and young child overdose death rate more than three times that of any other region in the Commonwealth. In contrast, the Northern region had the lowest rate. The Northwest region held the second lowest rate for infants and young children, contrary to what was seen in the teenage population where the Northwest region had the second highest poisoning death rate. The overall infant and young child overdose death rate was 0.29 per 100,000, which was roughly one-half the teenage overdose death rate of 0.63 per 100,000.

Southwest Virginia’s infant and young child overdose death rate was three times higher than any other region.

Figure 8: Infant and Young Child Overdose Death Rates in Virginia by Health Planning Region, Age 0-6, 2009-2013 (N=15)

\(^{32}\) Percent calculated from children age 6 and younger, whose mothers’ medical records were also reviewed by the Team (n=15).
How and why do infants and young children overdose?

The majority of infant and young child poisoning deaths were considered undetermined (47%) followed by accidents (40%) and homicides (13%). Both of the homicide victims were female and six of the seven undetermined deaths were male. See Figure 9. No gender differences were seen among accidental infant and young child poisoning death victims.

In 14 cases, the child was in his or her usual home at the time of the fatal incident. Mothers most often reported being the caregiver at the time of the fatal incident (73%) followed by fathers (33%) and grandparents (27%). Since the majority of cases occurred when the child obtained and ingested the fatal substance without the parent or caregiver’s knowledge, caregiver supervision and medication storage were two main factors for prevention identified by the Team. The Team noted that 13 of the 15 decedents were inadequately supervised at the time of the fatal incident. In every instance when the storage location of the fatal substance was known, the substance was considered to be kept in an inappropriate or unsafe place. Storage locations included an open closet, on a counter, in a purse, in a candy container, or dissolved in a beverage left within the child’s reach.

In nearly one-half of the decedents’ homes, medications were easily accessible to infants and young children. Medication storage practices included carrying medications and drugs around the home in a bucket, methadone stored with a loosely fitting lid that was knocked over, and medications stored in a candy container or loose on the floor. According to the Virginia Poison Center, these particular storage practices are dangerous for various reasons. Toddlers have an innate curiosity and inclination to put objects they find into their mouths, and children tend to imitate what they see like watching caregivers take medications. Young children can also confuse medications and household products with candy and
CHARACTERISTICS OF INFANT AND YOUNG CHILD DECEDENTS

drinks. These tendencies can lead to accidental ingestion of poisonous substances. The cumulative impact of these characteristics of caregivers and children and the careless storage of medications and household products often places children in precarious, yet avoidable, situations.

When medications were given to the child by the parent or caregiver, evidence suggested that they knowingly and purposely administered an incorrect dosage of medication to the child in six cases (40%), and of those, four caregivers (67%) had a history of routinely doing so. In nearly one-half of fatalities where ingestion was intended, the parent or caregiver used medication to manage the child’s behavior or to make them sleepy. Medication was administered to manage male and white children more often than female children and black or Asian children.

The Team noted that many of these children were described by caregivers as “fussy” or more difficult to manage around the time of the fatal incident. One child had been diagnosed with Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), and labeled at risk of Severe Emotional Disturbance (SED); one child’s pediatrician noted “ADHD tendencies” and at least one-third of children were born substance exposed. These characteristics point to infants and young children in need of additional caregiver attention. Yet caregivers were ill-equipped to care for the children’s condition, opting instead to use medication to address the needs of the children.

What substances caused poisonings among infants and young children?

A single drug or substance caused the fatality in 60% of cases, while multiple drugs or substances caused one in three deaths. Figure 10 depicts the distribution of fatal substances and, similar to teenagers, prescription drugs were the most common fatal substance that caused or contributed to the death of infants and young children. Over one-third of the prescription medications were narcotics followed by analgesics and anti-histamines. A household product like lotions, cleaners, or small

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34 Drug that in moderate doses dulls the senses, relieves pain, and induces profound sleep but in excessive doses causes stupor, coma, convulsions (e.g., heroin, fentanyl, morphine).
35 Any member of the group of drugs used to relieve pain like Ibuprofen, Aspirin, and Acetaminophen. Analgesic drugs act in various ways on the peripheral and central nervous systems.
batteries caused or contributed to three, or 20%, of fatalities while over-the-counter medications caused one death and contributed to another. Automobile exhaust was responsible for one death. Neither illicit drugs nor ethanol caused or contributed to any child poisoning deaths under the age of seven.

Prescription medications caused 60% of overdose deaths to children aged 0-6.

Narcotics caused more infant and young child poisoning deaths than any other substance. Figure 10: Drug Category Causing or Contributing to Poisoning Deaths for Children under Age 7 in Virginia, 2009-2013 (N=15)

Methadone caused or contributed to more than one in four infant and child poisoning fatalities making it the single most significant contributor to poisoning deaths to children age six and younger. Methadone is often used as a medication-assisted treatment approach for pregnant women and mothers tapering off of heroin and other opiates including narcotic pain medications.\(^{36}\) Methadone is offered in various forms including pills, liquids, and wafers that can be potentially enticing and easily accessible to children.\(^{35}\) Many caregivers were prescribed methadone and given the prevalence of

methadone induced deaths and substance exposed infants in this review, the Team noted the importance of educating providers about the risks of infant and child poisoning when prescribing methadone as a substance dependence treatment option. Case review revealed three practices especially dangerous: (1) methadone clinics allowing patients to take home too many doses, (2) substance misusing mothers giving medication to their child to control behavior, and (3) mothers selling methadone. Another caregiver admitted to a methadone clinic that she was giving her substance exposed child three to four more doses than she was instructed to give, and at one year old, the child’s toxicology results at death detected a methadone level lethal for an adult with no tolerance to the drug. Team members wondered why in some instances mothers with substance misuse histories were given the responsibility of tapering their infant’s withdrawal and weaning the infant off the drug. Why are individuals allowed to leave methadone clinics with large supplies of methadone? The Team identified the need to evaluate and change these practices to improve the effectiveness and safety of methadone treatment for both mothers and their families.

_How did the child’s home environment influence their poisoning death?_

The majority of children resided in homes with unsafe living conditions and profound substance misuse. As highlighted in Table 4, 12 of 15 children were on Medicaid and one-third of families received Supplemental Nutrition Assistance Program (SNAP) suggesting families lived at or below poverty level. Additionally, three caregivers received Social Security Disability benefits and two families received resources through Supplemental Nutrition Program for Women Infants and Children (WIC) and Temporary Assistance for Needy Families (TANF), respectively.

Over one-quarter of children lived in families with intergenerational substance misuse affecting the decedent’s grandparents and parents, while over one-half of decedents’ biological parents and caregivers had histories of substance misuse. Among parents with substance use disorders, 50% affected both parents, 38% affected mothers only, and 13% affected fathers only. In addition, two caregivers were known to have a physical or mental disability. Despite the prevalence of substance misuse and mental illness among caregivers, only one caregiver was recommended for services through a Community Services Board (CSB), and no caregivers received treatment through a CSB. At least four
Caregivers had a history of misusing substances in the presence of the decedent and at least two mothers were reported as being under the influence at the time of the fatal incident. Caregivers reported accidentally administering an incorrect medication to the child while under the influence of drugs or medications, while other caregivers knowingly administered medication to young children without understanding the adverse effects of administering incorrect dosages. Two caregivers were asleep at the time of the fatal incident when the children were awake and had no other adult supervision. At the conclusion of its review, the Team recognized that parents and other caregivers were in need of resources and education related to appropriate supervision, medication storage and medication administration for children.

Table 4: Selected Characteristics for Caregivers of Infant and Young Child Poison Victims in Virginia, 2009-2013 (N=15)

<table>
<thead>
<tr>
<th>Caregiver characteristics</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary caregiver at time of fatal incident</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>11</td>
<td>73</td>
</tr>
<tr>
<td>Father</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td>Grandparent</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>Marital status (biological parents)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never Married</td>
<td>9</td>
<td>60</td>
</tr>
<tr>
<td>Married</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>Divorced</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Separated</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Insurance provider</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>12</td>
<td>80</td>
</tr>
<tr>
<td>Private company</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Benefits Received</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplemental Nutrition Assistance Program (SNAP)</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td>Social Security Disability</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Supplemental Nutrition Program for Women Infants and Children (WIC)</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Temporary Assistance for Needy Families (TANF)</td>
<td>2</td>
<td>13</td>
</tr>
</tbody>
</table>

Most caregivers lacked the knowledge and skills to properly supervise, console, or manage their child’s care and their needs. Some did not have appropriate understanding of child development. A misperception of children’s abilities combined with substance misuse, mental illness, and the task of
caring for a child creates an environment that can lead to child abuse and neglect.\textsuperscript{37} Evidence of a poor living environment for the child can also be seen in the one in five, or 20%, of decedents who were exposed to or witnessed domestic violence within their home. Similarly, at least three children’s records listed them in the fifth percentile or below for weight to height comparison, a main indicator for failure to thrive.\textsuperscript{38} Despite the histories of caregivers, only two caregivers received an order or a referral for parenting classes, and neither caregiver followed through on classes. The Team wondered how these programs could be more accessible and helpful to parents in need of additional resources. The Team also acknowledged children’s unsafe home environments, and supports programs and services that will protect Virginia’s children while also providing suitable services to caregivers. Given the numerous red flags present within these young children’s homes, the Team recognizes the importance of home visiting programs and their potential to identify risk factors and to provide treatment referrals, assessments, and education in substance misusing homes to protect children and families in the Commonwealth.

\textbf{Key risk factors for infant and young children overdose}

An important aspect of the work performed by the State Child Fatality Review Team is identifying risk factors\textsuperscript{39} – characteristics or exposures that increase the probability of injury, disease, or death – for the topic under examination. Risk factors for infant and young child poisoning deaths relate to the child’s physical and social environments, family characteristics, and age-related inclinations. Representatives from agencies including but not limited to social services, health and behavioral health, law enforcement, and consumer safety can use the information garnered to improve their work of supporting Virginia’s children and their families. Agencies and organizations can adopt robust campaigns to spur awareness, education and programs focused on reducing risk factors and fostering protective factors seen in communities across the Commonwealth. Following the Team’s review and supplemental research, the factors listed in Table 5 were found to increase the likelihood of infant and young child poisoning.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
Factor & Description & Reference \\
\hline
Risk factor 1 & Description of risk factor 1 & Reference 1 \\
Risk factor 2 & Description of risk factor 2 & Reference 2 \\
Risk factor 3 & Description of risk factor 3 & Reference 3 \\
\hline
\end{tabular}
\caption{Risk factors associated with infant and young child overdose}
\end{table}

Table 5: Risk Factors Associated with Infant and Young Child Overdose in Virginia, Age 0-6, 2009-2013 (N=15)

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Description of Metric</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caregiver distraction/lack of supervision&lt;sup&gt;40&lt;/sup&gt;</td>
<td>State Child Fatality Review Team determined that the child was not appropriately supervised at the time of the fatal ingestion.</td>
<td>13</td>
<td>87</td>
</tr>
<tr>
<td>Improper storage of poisonous substances&lt;sup&gt;37, 39&lt;/sup&gt;</td>
<td>Poisonous substance was stored in an unlocked, open area (counter, closet, purse, floor, etc.). Unknown</td>
<td>8</td>
<td>53</td>
</tr>
<tr>
<td>Poverty&lt;sup&gt;41&lt;/sup&gt;</td>
<td>Child’s insurance was Medicaid. Child’s family received food assistance through SNAP (Supplemental Nutritional Assistance Program).</td>
<td>12</td>
<td>80</td>
</tr>
<tr>
<td>Parental psychiatric distress (mental health)&lt;sup&gt;42&lt;/sup&gt;</td>
<td>One or more caregivers were known to have a physical or mental disability.</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>History of addiction (substance misuse)&lt;sup&gt;39&lt;/sup&gt;</td>
<td>One or more caregiver had a history of substance misuse.</td>
<td>8</td>
<td>53</td>
</tr>
<tr>
<td>Lack of prompt treatment&lt;sup&gt;40&lt;/sup&gt;</td>
<td>Caregiver was aware of ingestion but delayed calling 911 or seeking other treatment. Range of delays were 1 to 14 hours.</td>
<td>7</td>
<td>47</td>
</tr>
<tr>
<td>Curiosity&lt;sup&gt;43&lt;/sup&gt;</td>
<td>The curious nature of toddlers prompts them to put everything they find in their mouths.</td>
<td>7</td>
<td>47</td>
</tr>
<tr>
<td>Look-a-likes&lt;sup&gt;40&lt;/sup&gt;</td>
<td>Child ingested poisonous substance when it was mistaken for candy or a drink.</td>
<td>7</td>
<td>47</td>
</tr>
</tbody>
</table>


SYSTEM CONTACTS

As a part of its review, the State Child Fatality Review Team studied which agencies and organizations had contact with the child and his or her family before their death. These agencies and organizations include social services, health and mental health care, schools, and the criminal justice system. Information from these contacts allowed the Team to determine potential points of intervention and prevention, to detect gaps or problems in responses to the needs of children, and to evaluate the efficacy of agency collaboration for child protection and wellbeing. The Team observed when children did and did not receive the services they needed and, when they did not, how and why they slipped through the cracks. Which agencies and organizations have the most contact with and potential to intervene with young children and teenagers? Were appropriate assessments and referrals made? Did children or families face any barriers to treatment? If children were receiving treatment for mental health or substance use, were certain aspects of treatment more or less effective? Do agencies and organizations have the resources, policies and procedures in place to provide adequate services for children and youth in the Commonwealth? Are any program, legislative or policy changes needed to prevent future deaths from similar circumstances? Following the Team’s deliberation, recommendations were developed to allow agencies and organizations to more effectively and efficiently serve Virginia’s youth and their families.

As illustrated in Figure 11, pediatricians were the primary, and in many cases the only, contact infants and young children had with an agency or organization who could identify that a child was abused or neglected. Infants and young children’s second main contact was with Child Protective Services (CPS) after a suspicion of child abuse and neglect was reported. Teenagers were in contact with a much wider array of agencies and organizations throughout their lives. The review revealed teen’s principal system contacts were with schools, health and mental health care providers, and the criminal justice system.

**Pediatricians.** The Team recognized that infants and young children have limited contact with agencies and organizations mainly because they have not yet begun school. This can lead to isolation within the family for children in this age range. The Team noted the critical piece that pediatricians play
in intervention and educational efforts around poison prevention, particularly for this vulnerable age group. Pediatricians served as a common and valuable point of contact for teenage decedents as well.

For children of all ages, a pediatrician noted known or possible substance misuse in the child’s medical record in nearly one-quarter of cases and noted known or possible parental substance misuse in three cases. Four teens visited the pediatrician at least once for pain without illness, injury, or chronic pain in the year before their death, and a pediatrician refused a child’s request for pain medication in two instances. Six children required hospitalization following a previous drug overdose. In these cases, the Team recognized the need for pediatricians to have access to their patients’ other medical records to fully address their needs. This was especially the case when children received care in emergency departments. With more complete information, pediatricians can better distinguish the signs of substance misuse and mental illness in order to work with families and to make referrals for additional services as necessary.

**Mental Health and Substance Misuse Treatment.** The vast majority of children in the Team’s review had histories of mental/behavioral health and substance misuse issues. Over one-half of decedents were treated for mental health and slightly more than one-quarter were treated for substance misuse. Teenagers typically received outpatient or both inpatient and outpatient treatment for mental health and substance misuse, and four children were the subject of at least one Temporary Detention Order or involuntary commitment. Additionally, children’s Community Services Board (CSB) utilization, albeit limited, involved mental health services (19%), behavioral treatment services (15%), and substance misuse services (8%). CSBs treated both substance misuse and mental illness in two cases even though many teens had histories of both problems. The Team identified the need for children to be assessed for both mental health and substance misuse since the conditions often overlap and can influence the medications prescribed, patient compliance, and the overall treatment regimen that should be chosen by providers.

Of the ten teenagers who received referrals for substance misuse services, seven received treatment. The Team observed that referrals were not being made nearly as often as they should have.
One-third of children encountered barriers to substance use or mental health treatment that often resulted from a lack of parental support. Despite the fact that more than three-quarters of parents were aware of their child’s substance use and over one-half of parents and caregivers in both age groups suffered from substance misuse themselves, only 12% of families received family counseling services from a CSB as an approach to treating their child’s substance misuse and mental illness. For this reason, the Team identified the need to treat children and families when addressing substance misuse and mental illness. All family members would have benefitted from such counseling because it would recognize and address the family system in which substance use and misuse occurred.

School System. The school system represented a particularly critical contact for teenagers. Many of the warning signs for child abuse and neglect or other problems - truancy, significant drops in grades, and behavioral changes – surfaced in a school environment. Excessive absences suggested a factor increasing the risk for overdose among teenagers. Approximately three out of four teens demonstrated a history of disciplinary issues in school, and over one-half of the teenage decedents had received an out-of-school suspension. Many teens also voluntarily left public or private school to be placed in either homebound instruction (19%) or to enroll in a GED program (15%). The Team noted the adverse effects of these actions, particularly since home environments in their review were not conducive to well-being or academic success.

Child Protective Services. Sixteen of the 41 families in the Team’s review (39%) had a prior history with Child Protective Services (CPS). Six children were involved in a prior CPS family assessment: five of these children were under the age of 9 and one child was a teenager. CPS initiated 20 family assessments among these families, completing from 1 to 9 assessments per family. Five children were the subject of a prior CPS investigation, four of which were founded for abuse or neglect. Four parents or caregivers were the subject of at least one prior founded CPS investigation including one caregiver who was the subject of two prior founded CPS investigations. The Team noticed that although a similar number of caregivers for children of all ages were known to CPS prior to the child’s death, the caregivers of teenage decedents were less likely to have a founded complaint compared to the caregivers of infants and young children. Given the abundant history CPS had with many of these families, the Team
questioned how this prior relationship and the services provided could have been used in order to prevent these and future child fatalities.

**Juvenile Justice System.** Nearly three out of four teenage decedents had previous encounters with law enforcement, and over one-half of the teenagers in this review received prior referrals or intake reports in the juvenile justice system. Drug offenses were the most common law enforcement charge for teens, along with assault and battery, and larceny or theft. In addition, a Children in Need of Services (CHINS) petition was filed with Juvenile and Domestic Relations court on behalf of three truant teens.

**Poison Centers.** The Team noted the extreme underutilization of Poison Centers found in this review of child poisoning deaths. Poison Centers were called in only three of the 41 (7%) poisoning cases reviewed by the Team. Poison Centers serve as a critical resource for families during a potential poisoning, remove some of the burden from emergency rooms, and provide an important communication medium for public awareness and education. The Team supports the work of Poison Centers and recommends resources be allocated to increase the capacity and reach of these Centers, particularly in light of the overdose epidemic currently sweeping the nation.
Figure 11: System Contacts among Child Poisoning Decedents in Virginia, Age 0-17, 2009-2013 (N=41)

Infants and Young Children (ages 0-6)*

- Pediatric visits
- Substance misuse in pediatric record
- Mental/behavioral health diagnosis
- Mental health treatment
- Barriers to treatment
- Substance dependence diagnosis
- Substance abuse treatment
- Referred to CSB
- TDO or involuntary commitment
- Hospitalized for drug overdose
- Child known to CPS
- Prior founded CPS complaint (victim)
- Caregiver known to CPS
- Founded CPS history (caregiver)
- Poison Center called
- Law enforcement history
- DJJ history
- Prior DJJ drug offense
- 30-39 school absences
- Truancy affected grades
- CHINS-Truancy complaint filed
- Prior out-of-school suspension
- Expelled for drug offense

Teenagers (ages 13-17)

- Parent or caregiver was known to CPS prior to child's death
- Parent or caregiver had a prior founded CPS abuse or neglect complaint
- Poison Center was contacted during the fatal incident
- Child had prior encounter with law enforcement
- Child was known to the Department of Juvenile Justice (DJJ) prior to death
- Child had a record of a prior drug offense with Juvenile Justice
- Child were absent 30-39 times during the previous school year
- School noted truancy was affecting the child's grade
- CHINS-Truancy complaint filed with Juvenile and Domestic Relations court
- Child received an out-of-school suspension from school

* No child poisoning fatalities between 2009-2013 were children aged 7-12

1 Child saw pediatrician in the year prior to death
2 Pediatrician noted possible substance misuse in the child's record
3 Child had a prior or current mental or behavioral health diagnosis
4 Child received prior mental health treatment
5 Child encountered barriers to mental health or substance abuse treatment
6 Child had diagnosis of a substance dependence disorder
7 Child received prior substance abuse treatment
8 Child recommended for services through a Community Services Board (CSB)
9 Child had a prior Temporary Detention Order (TDO) or involuntary commitment
10 Child was previously hospitalized for drug overdose
11 Child was known to Child Protective Services (CPS) prior to death
12 Child was the victim in a prior founded complaint to CPS
13 Parent or caregiver was known to CPS prior to child's death
14 Parent or caregiver had a prior founded CPS abuse or neglect complaint
15 Poison Center was contacted during the fatal incident
16 Child had prior encounter with law enforcement
17 Child was known to the Department of Juvenile Justice (DJJ) prior to death
18 Child had a record of a prior drug offense with Juvenile Justice
19 Child were absent 30-39 times during the previous school year
20 School noted truancy was affecting the child's grade
21 CHINS-Truancy complaint filed with Juvenile and Domestic Relations court
22 Child received an out-of-school suspension from school
Because deaths by poisonous ingestion are largely preventable, the complete review and documentation of what happened in these deaths is critical to understanding how to reduce such injuries in the future. The State Child Fatality Review Team examined and discussed death investigation findings from law enforcement agencies, from the Office of the Chief Medical Examiner, and from local departments of social services through their Child Protective Services unit. Each of these entities plays a critical role in illuminating the details surrounding the death of a child and in identifying risk and protective factors present at the time of the child’s fatal injury.

**Law Enforcement.** Law enforcement officers are typically the first investigators to arrive after a child has died. Their responsibilities include securing the scene of the injury, analyzing the scene to determine which evidence to collect, properly collecting and storing evidence, taking photographs and any measurements required, interviewing caregivers and witnesses about the events surrounding the lethal injury, reporting relevant death cases to the Office of the Chief Medical Examiner and, if child abuse or neglect is suspected, reporting the child death to the local department of social services. By virtue of their duties and by the multiple decisions made and early actions taken in the process of child death investigations, the law enforcement investigation is essential to successful and comprehensive investigations and prosecutions in the case.

The State Child Fatality Review Team looks for law enforcement to be impartial and circumspect when completing child death investigations. Team members often use the phrase “index of suspicion” to characterize their expectations that law enforcement conduct a child death investigation of the highest standard, one that makes no a priori judgment that the death was due to natural or accidental causes or unrelated to criminal or negligent intent. Death scenes may be altered soon after a child’s injury or death, so the timing of evidence collection and scene documentation is critical. It is also important to interview all witnesses separately and sometimes more than once to follow up on new information as it is known.

The State Child Fatality Review Team reviewed initial incident reports from law enforcement in 38 of 44 child poisoning death cases, and a final report summarizing further investigation in 36, or 92%, of

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44 Law enforcement was not notified of three child death cases. All three of these children died in a hospital under the care of a physician. At their death, hospital staff reported the deaths to the Office of the Chief Medical Examiner.
relevant cases. No additional investigation reports were received in the other two cases. Law enforcement records indicated that they had collected evidence in 74% of child poisoning deaths, interviewed witnesses in 97% of cases and interviewed the child’s parents or caregivers in 97% of cases. Finally, law enforcement attempted to locate the source of the ingested substance in 61% of cases and successfully did so in 91% of these cases.

The State Child Fatality Review Team noted challenges to a thorough and impartial investigation in roughly 25% of cases. Most critically, death investigations of suspected suicide were often brief and scant with few details. It appeared as though law enforcement changed the level of investigation once the suicide determination was made. In some cases, interviews with parents or other caregivers were conducted jointly, which impacted the ability to get multiple points of view, leading instead to a single story or summary of events surrounding the child’s life, injury, and death. In small communities, some law enforcement personal knew the family or the decedent child personally. In these cases, the Team wondered how this knowledge impacted the depth and breadth of the investigation and the ability to conduct an impartial investigation.

As the Team developed their recommendations to improve child death investigations, they suggested the need for a statewide model child death investigation policy and protocol to assist law enforcement in managing the unique challenges and hardships associated with child deaths. Most critically, every child death should be investigated with a high index of suspicion and a thorough and careful scrutiny of the death scene and all witnesses. This protocol should include specific information about investigation of child deaths related to the ingestion of poisons, with instruction on how to approach and complete such an investigation that supports a multiagency response to the current overdose epidemic in Virginia.

**Office of the Chief Medical Examiner.** By law, the Virginia Office of the Chief Medical Examiner (OCME) conducts a comprehensive medico-legal death investigation to determine the cause and manner of death. This is its unique role and contribution when a child dies. The Office performed an autopsy in

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45 Cause of death refers to specific injuries or diseases that lead to the cessation of life, such as blunt force trauma to the brain or pancreatic cancer. Manner of death clarifies the circumstances of the death as natural, accident, suicide, homicide, or undetermined.
95% of child poisoning deaths reviewed for this report, and an external view in the other 5%. In completing its review, the medical personnel in the Office relied on supplementary information from the investigations of law enforcement personnel; from toxicological and other findings from forensic scientists; and from medical histories and records from a variety of health care professionals and agencies who treated the decedent. This information shapes the forensic physician’s decision that a child’s death was due to accidental, suicidal, or homicidal intent. Because all of the children in this review died after ingesting a poison – sometimes an overdose of medications and sometimes an ingestion of a household or other product not meant for human consumption – toxicological findings were critical to determining cause and manner of death.

To support the capacity of the OCME to complete its investigations in poison related deaths, the Team discussed the importance of holding blood samples drawn at the time of hospital admission when patients are seriously or gravely ill. Typically, hospitals dispose of this admission blood shortly after a patient is admitted, usually within 24 hours. However, if a patient survives for several days before their death, their admission blood can be important to the OCME in establishing a baseline and isolating levels of poisoning before other medical interventions occurred.

**Child Protective Services.** When a child dies and their death may be due to child abuse and/or neglect, a local department of social services can investigate the circumstances of the child’s family and care to determine if, in fact, child abuse and/or neglect has occurred. During their investigation, performed by Child Protective Services (CPS) professionals, the children’s parents or other caregivers are interviewed about the child’s death. The role of CPS is to determine if abuse or neglect has occurred, to assess risk to any surviving children in the home, and to offer services to address problems or issues identified during the investigation. While conducting their investigation, CPS professionals rely on input from law enforcement and from the Office of the Chief Medical Examiner in making their determination.

Of the 15 infants and young children who died from a poisoning death, 11 (73%) were investigated for potential child abuse or neglect and 100% of these poisoning cases resulted in a substantiated finding that the infant or child was abused or neglected by their caretaker. Among the 26

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46 Autopsies were not required in two cases where the child was admitted to a hospital before their death, and where medical information provided by the facility was sufficient to determine the cause of death. In these cases, an external view of the body performed by a physician confirmed the information in hospital records.
teenagers who died, five (19%) were investigated as suspicious for child abuse or neglect and 60% of these cases were also substantiated.

Members of the State Child Fatality Review Team noted the depth and breadth of these CPS investigations and the degree to which a strong outcome to these investigations is dependent on coordination and communication with law enforcement and the Office of the Chief Medical Examiner. At the same time, the Team expressed concerns about the number of children and their caregivers who were already known to CPS before their death. For those whose earlier reports were not founded for abuse or neglect: Were critical risk factors missed in these earlier opportunities to intervene and protect the child? For cases where prior investigations resulted in a finding of child abuse and neglect: What might the benefit of hindsight reveal about CPS policy and practice? Were actions taken in response to the report of abuse and neglect appropriate to the risk factors in the child’s life? Given the risk factors described among teenagers in earlier sections of this report, should more of these cases be reported and investigated for suspicions of child abuse and neglect?

Team members also discussed what appeared to be a lack of consistency across the state of Virginia with regard to CPS death investigations. They observed that child death cases with similar circumstances would vary in which death was investigated and which was not, and that this variation was shaped by region of the state. Why are some infant and child deaths accepted for investigations while others are not? How does law or policy permit such discrepancies, and what can be done to assure that all deaths meeting similar criteria are investigated?
APPENDIX A - Amend and reenact § 22.1-277.2:1 A of the Code of Virginia relating to the disciplinary authority of school boards under certain circumstances.

A. A school board may, in accordance with the procedures set forth in this article, require any student who has been (i) charged with an offense relating to the Commonwealth's laws, or with a violation of school board policies, on weapons, alcohol or drugs, or intentional injury to another person, or with an offense that is required to be disclosed to the superintendent of the school division pursuant to subsection G of § 16.1-260; (ii) found guilty or not innocent of an offense relating to the Commonwealth's laws on weapons, alcohol, or drugs, or of a crime that resulted in or could have resulted in injury to others, or of an offense that is required to be disclosed to the superintendent of the school division pursuant to subsection G of § 16.1-260; (iii) found to have committed a serious offense or repeated offenses in violation of school board policies; (iv) suspended pursuant to § 22.1-277.05; or (v) expelled pursuant to § 22.1-277.06, 22.1-277.07, or 22.1-277.08, or subsection B of § 22.1-277, to attend an alternative education program. A school board may require such student to attend such programs regardless of where the crime occurred. School boards may shall require any student who has been found, in accordance with the procedures set forth in this article, to have been in possession of, or under the influence of, drugs or alcohol on a school bus, on school property, or at a school-sponsored activity in violation of school board policies, to undergo evaluation for drug or alcohol abuse, or both, and, if recommended by the evaluator and with the consent of the student's parent, to participate in a treatment program.
APPENDIX B – Amend and reenact §§ 63.2-1505 and 63.2-1509 of the Code of Virginia relating to investigations by local departments of social services and reporting requirements for mandated reporters of suspected child abuse and neglect.

§ 63.2-1505. Investigations by local departments.

A. An investigation requires the collection of information necessary to determine:
   1. The immediate safety needs of the child;
   2. The protective and rehabilitative services needs of the child and family that will deter abuse or neglect;
   3. Risk of future harm to the child;
   4. Alternative plans for the child's safety if protective and rehabilitative services are indicated and the family is unable or unwilling to participate in services;
   5. Whether abuse or neglect has occurred;
   6. If abuse or neglect has occurred, who abused or neglected the child; and
   7. A finding of either founded or unfounded based on the facts collected during the investigation.

B. If the local department responds to the report or complaint by conducting an investigation, the local department shall:
   1. Make immediate investigation and, if the report or complaint was based upon one of the factors specified in subsection B of § 63.2-1509, the local department may file a petition pursuant to § 16.1-241.3;
   2. Complete a report and transmit it forthwith to the Department, except that no such report shall be transmitted in cases in which the cause to suspect abuse or neglect is one of the factors specified in subsection B of § 63.2-1509 and the mother sought substance abuse counseling or treatment prior to the child's birth enter it into the state automated system;
APPENDIX B: Amend and reenact §§ 63.2-1505 and 63.2-1509 of the Code of Virginia

3. Consult with the family to arrange for necessary protective and rehabilitative services to be provided to the child and his family;

4. Petition the court for services deemed necessary including, but not limited to, removal of the child or his siblings from their home;

5. Determine within 45 days if a report of abuse or neglect is founded or unfounded and transmit a report to such effect to the Department and to the person who is the subject of the investigation. However, upon written justification by the local department, the time for such determination may be extended not to exceed a total of 60 days or, in the event that the investigation is being conducted in cooperation with a law-enforcement agency and both parties agree that circumstances so warrant, as stated in the written justification, the time for such determination may be extended not to exceed 90 days. If through the exercise of reasonable diligence the local department is unable to find the child who is the subject of the report, the time the child cannot be found shall not be computed as part of the total time period allowed for the investigation and determination and documentation of such reasonable diligence shall be placed in the record. In cases involving the death of a child or alleged sexual abuse of a child who is the subject of the report, the time during which records necessary for the investigation of the complaint but not created by the local department, including autopsy or medical or forensic records or reports, are not available to the local department due to circumstances beyond the local department’s control shall not be computed as part of the total time period allowed for the investigation and determination, and documentation of the circumstances that resulted in the delay shall be placed in the record. In cases in which the subject of the investigation is a full-time, part-time, permanent, or temporary employee of a school division who is suspected of abusing or neglecting a child in the course of his educational employment, the time period for determining whether a report is founded or unfounded and transmitting a report to that effect to the Department and the person who is the subject of the investigation shall be mandatory, and every local department shall make the required determination and report within the specified time period without delay;
APPENDIX B: Amend and reenact §§ 63.2-1505 and 63.2-1509 of the Code of Virginia

6. If a report of abuse or neglect is unfounded, transmit a report to such effect to the complainant and parent or guardian and the person responsible for the care of the child in those cases where such person was suspected of abuse or neglect; and

7. If a report of child abuse and neglect is founded, and the subject of the report is a full-time, part-time, permanent, or temporary employee of a school division located within the Commonwealth, notify the relevant school board of the founded complaint.

Any information exchanged for the purposes of this subsection shall not be considered a violation of § 63.2-102, 63.2-104, or 63.2-105.

C. Each local board may obtain and consider, in accordance with regulations adopted by the Board, statewide criminal history record information from the Central Criminal Records Exchange and results of a search of the child abuse and neglect central registry of any individual who is the subject of a child abuse or neglect investigation conducted under this section when there is evidence of child abuse or neglect and the local board is evaluating the safety of the home and whether removal will protect a child from harm. The local board also may obtain such a criminal records or registry search on all adult household members residing in the home where the individual who is the subject of the investigation resides and the child resides or visits. If a child abuse or neglect petition is filed in connection with such removal, a court may admit such information as evidence. Where the individual who is the subject of such information contests its accuracy through testimony under oath in hearing before the court, no court shall receive or consider the contested criminal history record information without certified copies of conviction. Further dissemination of the information provided to the local board is prohibited, except as authorized by law.

D. A person who has not previously participated in the investigation of complaints of child abuse or neglect in accordance with this chapter shall not participate in the investigation of any case involving a complaint of alleged sexual abuse of a child unless he (i) has completed a Board-approved training program for the investigation of complaints involving alleged sexual abuse of a child or (ii) is under the direct supervision of a person who has completed a Board-
APPENDIX B: Amend and reenact §§ 63.2-1505 and 63.2-1509 of the Code of Virginia

approved training program for the investigation of complaints involving alleged sexual abuse of a child. No individual may make a determination of whether a case involving a complaint of alleged sexual abuse of a child is founded or unfounded unless he has completed a Board-approved training program for the investigation of complaints involving alleged sexual abuse of a child.

§ 63.2-1509. Requirement that certain injuries to children be reported by physicians, nurses, teachers, etc.; penalty for failure to report.

A. The following persons who, in their professional or official capacity, have reason to suspect that a child is an abused or neglected child, shall report the matter immediately to the local department of the county or city wherein the child resides or wherein the abuse or neglect is believed to have occurred or to the Department's toll-free child abuse and neglect hotline:

1. Any person licensed to practice medicine or any of the healing arts;
2. Any hospital resident or intern, and any person employed in the nursing profession;
3. Any person employed as a social worker or family-services specialist;
4. Any probation officer;
5. Any teacher or other person employed in a public or private school, kindergarten or nursery school;
6. Any person providing full-time or part-time child care for pay on a regularly planned basis;
7. Any mental health professional;
8. Any law-enforcement officer or animal control officer;
9. Any mediator eligible to receive court referrals pursuant to § 8.01-576.8;
10. Any professional staff person, not previously enumerated, employed by a private or state-operated hospital, institution or facility to which children have been committed or where children have been placed for care and treatment;
APPENDIX B: Amend and reenact §§ 63.2-1505 and 63.2-1509 of the Code of Virginia

11. Any person 18 years of age or older associated with or employed by any public or private organization responsible for the care, custody or control of children;

12. Any person who is designated a court-appointed special advocate pursuant to Article 5 (§ 9.1-151 et seq.) of Chapter 1 of Title 9.1;

13. Any person 18 years of age or older who has received training approved by the Department of Social Services for the purposes of recognizing and reporting child abuse and neglect;

14. Any person employed by a local department as defined in § 63.2-100 who determines eligibility for public assistance;

15. Any emergency medical services provider certified by the Board of Health pursuant to § 32.1-111.5, unless such provider immediately reports the matter directly to the attending physician at the hospital to which the child is transported, who shall make such report forthwith;

16. Any athletic coach, director or other person 18 years of age or older employed by or volunteering with a private sports organization or team;

17. Administrators or employees 18 years of age or older of public or private day camps, youth centers and youth recreation programs; and

18. Any person employed by a public or private institution of higher education other than an attorney who is employed by a public or private institution of higher education as it relates to information gained in the course of providing legal representation to a client.

This subsection shall not apply to any regular minister, priest, rabbi, imam, or duly accredited practitioner of any religious organization or denomination usually referred to as a church as it relates to (i) information required by the doctrine of the religious organization or denomination to be kept in a confidential manner or (ii) information that would be subject to § 8.01-400 or 19.2-271.3 if offered as evidence in court.

If neither the locality in which the child resides nor where the abuse or neglect is believed to have occurred is known, then such report shall be made to the local
APPENDIX B: Amend and reenact §§ 63.2-1505 and 63.2-1509 of the Code of Virginia

department of the county or city where the abuse or neglect was discovered or to the Department's toll-free child abuse and neglect hotline.

If an employee of the local department is suspected of abusing or neglecting a child, the report shall be made to the court of the county or city where the abuse or neglect was discovered. Upon receipt of such a report by the court, the judge shall assign the report to a local department that is not the employer of the suspected employee for investigation or family assessment. The judge may consult with the Department in selecting a local department to respond to the report or the complaint.

If the information is received by a teacher, staff member, resident, intern or nurse in the course of professional services in a hospital, school or similar institution, such person may, in place of said report, immediately notify the person in charge of the institution or department, or his designee, who shall make such report forthwith. If the initial report of suspected abuse or neglect is made to the person in charge of the institution or department, or his designee, pursuant to this subsection, such person shall notify the teacher, staff member, resident, intern or nurse who made the initial report when the report of suspected child abuse or neglect is made to the local department or to the Department's toll-free child abuse and neglect hotline, and of the name of the individual receiving the report, and shall forward any communication resulting from the report, including any information about any actions taken regarding the report, to the person who made the initial report.

The initial report may be an oral report but such report shall be reduced to writing by the child abuse coordinator of the local department on a form prescribed by the Board. Any person required to make the report pursuant to this subsection shall disclose all information that is the basis for his suspicion of abuse or neglect of the child and, upon request, shall make available to the child-protective services coordinator and the local department, which is the agency of jurisdiction, any information, records, or reports that document the basis for the report. All persons required by this subsection to report suspected abuse or neglect who maintain a record of a child who is the subject of such a report shall cooperate with the
APPENDIX B: Amend and reenact §§ 63.2-1505 and 63.2-1509 of the Code of Virginia

investigating agency and shall make related information, records and reports available to the investigating agency unless such disclosure violates the federal Family Educational Rights and Privacy Act (20 U.S.C. § 1232g). Provision of such information, records, and reports by a health care provider shall not be prohibited by § 8.01-399. Criminal investigative reports received from law-enforcement agencies shall not be further disseminated by the investigating agency nor shall they be subject to public disclosure.

B. For purposes of subsection A, "reason to suspect that a child is abused or neglected" shall include (i) a finding made by a health care provider within six weeks of the birth of a child that the results of toxicology studies of the child indicate the presence of a controlled substance not prescribed for the mother by a physician; (ii) a finding made by a health care provider within six weeks of the birth of a child that the child was born dependent on a controlled substance which was not prescribed by a physician for the mother and has demonstrated affected by illegal substance abuse or experiencing withdrawal symptoms resulting from prenatal drug exposure; (iii) a diagnosis made by a health care provider at any time following a child's birth that the child has an illness, disease or condition which, to a reasonable degree of medical certainty, is attributable to in utero exposure to a controlled substance which was not prescribed by a physician for the mother or the child; or (iv) a diagnosis made by a health care provider at any time following a child's birth that the child has a fetal alcohol spectrum disorder attributable to in utero exposure to alcohol. When "reason to suspect" is based upon this subsection, such fact shall be included in the report along with the facts relied upon by the person making the report.

C. Any person who makes a report or provides records or information pursuant to subsection A or who testifies in any judicial proceeding arising from such report, records, or information shall be immune from any civil or criminal liability or administrative penalty or sanction on account of such report, records, information, or testimony, unless such person acted in bad faith or with malicious purpose.
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D. Any person required to file a report pursuant to this section who fails to do so as soon as possible, but not longer than 24 hours after having reason to suspect a reportable offense of child abuse or neglect, shall be fined not more than $500 for the first failure and for any subsequent failures not less than $1,000. In cases evidencing acts of rape, sodomy, or object sexual penetration as defined in Article 7 (§ 18.2-61 et seq.) of Chapter 4 of Title 18.2, a person who knowingly and intentionally fails to make the report required pursuant to this section shall be guilty of a Class 1 misdemeanor.

E. No person shall be required to make a report pursuant to this section if the person has actual knowledge that the same matter has already been reported to the local department or the Department's toll-free child abuse and neglect hotline.
APPENDIX C: VIRGINIA LOCALITIES BY HEALTH PLANNING REGION AND MEDICAL EXAMINER DISTRICT

Virginia Health Planning Regions

Virginia Office of the Chief Medical Examiner Districts
APPENDIX D: STATE CHILD FATALITY REVIEW TEAM STATUTE

§ 32.1-283.1. State Child Fatality Review Team; membership; access to and maintenance of records; confidentiality; etc.

A. There is hereby created the State Child Fatality Review Team, referred to in this section as "the Team," which shall develop and implement procedures to ensure that child deaths occurring in Virginia are analyzed in a systematic way. The Team shall review (i) violent and unnatural child deaths, (ii) sudden child deaths occurring within the first 18 months of life, and (iii) those fatalities for which the cause or manner of death was not determined with reasonable medical certainty. No child death review shall be initiated by the Team until conclusion of any law-enforcement investigation or criminal prosecution. The Team shall (i) develop and revise as necessary operating procedures for the review of child deaths, including identification of cases to be reviewed and procedures for coordination among the agencies and professionals involved, (ii) improve the identification, data collection, and record keeping of the causes of child death, (iii) recommend components for prevention and education programs, (iv) recommend training to improve the investigation of child deaths, and (v) provide technical assistance, upon request, to any local child fatality teams that may be established. The operating procedures for the review of child deaths shall be exempt from the Administrative Process Act (§ 2.2-4000 et seq.) pursuant to subdivision B 17 of § 2.2-4002.

B. The 16-member Team shall be chaired by the Chief Medical Examiner and shall be composed of the following persons or their designees: the Commissioner of Behavioral Health and Developmental Services; the Director of Child Protective Services within the Department of Social Services; the Superintendent of Public Instruction; the State Registrar of Vital Records; and the Director of the Department of Criminal Justice Services. In addition, one representative from each of the following entities shall be appointed by the Governor to serve for a term of three years: local law-enforcement agencies, local fire departments, local departments of social services, the Medical Society of Virginia, the Virginia College of Emergency Physicians, the Virginia Pediatric Society, local emergency medical services personnel, attorneys for the Commonwealth, and community services boards.

C. Upon the request of the Chief Medical Examiner in his capacity as chair of the Team, made after the conclusion of any law-enforcement investigation or prosecution, information and records regarding a child whose death is being reviewed by the Team may be inspected and copied by the Chief Medical Examiner or his designee, including, but not limited to, any report of the circumstances of the event maintained by any state or local law-enforcement agency or medical examiner, and information or records maintained on such child by any school, social services agency or court. Information, records, or reports maintained by any attorney for the Commonwealth shall be made available for inspection and copying by the Chief Medical Examiner pursuant to procedures which shall be developed by the Chief Medical Examiner and the Commonwealth's Attorneys' Services Council established by § 2.2-2617. Any presentence
report prepared pursuant to § 19.2-299 for any person convicted of a crime that led to the death of the child shall be made available for inspection and copying by the Office of the Chief Medical Examiner pursuant to procedures which shall be developed by the Chief Medical Examiner. In addition, the Office of the Chief Medical Examiner may inspect and copy from any Virginia health care provider, on behalf of the Team, (i) without obtaining consent, the health and mental health records of the child and those perinatal medical records of the child’s mother that related to such child and (ii) upon obtaining consent from each adult regarding his personal records, or from a parent regarding the records of a minor child, the health and mental health records of the child's family. All such information and records shall be confidential and shall be excluded from the Virginia Freedom of Information Act (§ 2.2-3700 et seq.) pursuant to subdivision 9 of § 2.2-3705.5. Upon the conclusion of the child death review, all information and records concerning the child and the child's family shall be shredded or otherwise destroyed by the Office of the Chief Medical Examiner in order to ensure confidentiality. Such information or records shall not be subject to subpoena or discovery or be admissible in any criminal or civil proceeding. If available from other sources, however, such information and records shall not be immune from subpoena, discovery, or introduction into evidence when obtained through such other sources solely because the information and records were presented to the Team during a child death review. Further, the findings of the Team may be disclosed or published in statistical or other form which shall not identify individuals. The portions of meetings in which individual child death cases are discussed by the Team shall be closed pursuant to subdivision A 21 of § 2.2-3711. In addition to the requirements of § 2.2-3712, all team members, persons attending closed team meetings, and persons presenting information and records on specific child deaths to the Team during closed meetings shall execute a sworn statement to honor the confidentiality of the information, records, discussions, and opinions disclosed during any closed meeting to review a specific child death. Violations of this subsection are punishable as a Class 3 misdemeanor. D. Upon notification of a child death, any state or local government agency maintaining records on such child or such child’s family which are periodically purged shall retain such records for the longer of 12 months or until such time as the State Child Fatality Review Team has completed its child death review of the specific case. E. The Team shall compile annual data which shall be made available to the Governor and the General Assembly as requested. These statistical data compilations shall not contain any personally identifying information and shall be public records.
APPENDIX E: STATE CHILD FATALITY REVIEW TEAM PROTOCOL

In 1994, the Virginia General Assembly enacted Virginia Code § 32.1-283.1, which established the State Child Fatality Review Team. The multidisciplinary Team consists of representatives from state and local agencies including, but not limited to, social services, law enforcement, public health, Emergency Medical Services, Commonwealth’s Attorney, schools, health and behavioral health care, and child advocacy groups such as Safe Kids and Prevent Child Abuse Virginia. Pursuant to Virginia law, the Team develops and implements procedures to ensure child deaths that occur in Virginia are analyzed in a systematic way. Since 1995, the State Child Fatality Review Team has been reviewing child deaths by selecting an epidemiologic focus for each review (e.g., unsafe sleep, homicides, and motor vehicle collisions). Topically focused reviews allow the Team to garner information on specific types of deaths in order to develop evidence-based recommendations to improve agency collaboration, prevention initiatives, coordination of care, child death investigation, and legislative action pertaining to the type of death under review.

The information presented in this report was gathered through records from agencies or persons who provided services to children and their families who were included in this review. The Team is authorized by statute to review such records that may include, but are not limited to, records from the Office of the Chief Medical Examiner (OCME), local departments of social services, Emergency Medical Services providers (EMS), hospitals, physicians, law enforcement departments, counselors, schools, Community Services Boards, Juvenile and Domestic Relations District Courts, and Court Service Units of the Department of Juvenile Justice. The Chair sends initial record requests to law enforcement, EMS, hospitals, physicians, and DSS. Additional service providers are identified through the examination of these initial records. The Chair continues to send letters to identify service providers until all applicable records are compiled. Once the case file is complete, the case is assigned to Team members who review the materials, create a case summary, and present the summary to the Team during a closed and confidential meeting. During case review sessions, the Team identifies systematic gaps in services, potential prevention and intervention opportunities, agency best practices, areas for personnel training and public education as well as possible changes needed in legislation, policies, protocols, and procedures. Data garnered from records and Team discussions are entered into a database for summary and analysis. These data are used to craft evidence-based recommendations to increase agency collaboration, improve child death investigations, and to prevent future child fatalities. At the conclusion of the review, the Team presents a report summarizing its findings and recommendations to the General Assembly of Virginia and the public.

Throughout the review, confidentiality is protected in three ways. First, the records obtained by the Team are excluded from the Virginia Freedom of Information Act and they cannot be obtained by a third party. Second, each Team member signs a sworn confidentiality statement; violations of confidentiality are considered a Class 3 misdemeanor. Third, all records are destroyed upon the completion of the review.
This report is available at the following website:
http://www.vdh.virginia.gov/medical-examiner/fatality-review-surveillance-programs-
reports/child-fatality-review-in-virginia/reports/

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