Suicide

The 21 suicide firearm fatalities occurred in children and adolescents aged 9 to 17 with 90% of the suicides among males. Selected age, sex and race specific suicide rates per hundred thousand can be seen in Table 3. Among the 15 to 17 year olds, the rate of white male suicide was 8.93 per hundred thousand; among black males the rate per hundred thousand was 6.82. Thus white males in this age group committed suicide 1.3 times more frequently than black males. Furthermore, the rate of white male suicide in this age group was 7.5 times that of white female, for a rate of 8.93 per hundred thousand compared with 1.18 per hundred thousand. There are several factors associated with adolescent suicide that were observed in this case review. These include psychiatric diagnosis, ^{vi} academic difficulties, legal problems, ^{vii} and the presence of firearms in the home. ^{viii} ix</sup> Seven of the 21 firearm suicides carried either a behavioral or psychiatric diagnosis or both, and of those, six had received some type of counseling or psychiatric treatment. Of the 14 youth without a psychiatric diagnosis, nine had academic difficulties and/or juvenile system involvement. Household firearms were used in 95% of the suicides, and 86% of the firearms were handguns. In addition to psychopathology, adolescent suicide may be

	~	Selected Firea r hundred the			•••	
Age Group 15 to 17	No.	Population	Rate	No.	Population	Rate
White	2	89,578	2.23	2	84,320	2.37
Black	14	29,313	47.76	2	28,658	6.97

	ре	Selected Fire er hundred th				
	Male			Female		
Age Group	No.	Population	Rate	No.	Population	Rate
15 to 17						
White	8	89,578	8.93	1	84,320	1.18
	2	29,313	6.82	0		

associated with impulsive behavior precipitated by a variety of circumstances, such as break-up with a boyfriend or girlfriend, the death of a friend or parent, and other life events. The Team did not collect this type of precipitating event information for the suicide firearm fatalities, but will look more closely at these issues in its next fatality review.

Several suicides took place during encounters with law enforcement officers. While each situation was unique, the Team believes that these deaths indicate a need for increased vigilance by law enforcement officers when they encounter adolescents. When law enforcement officers encounter youth while serving warrants or responding to calls for help from families, they need to be aware that developmentally, adolescents are impulsive, immature, and may act without thinking about the consequences.

Unintentional Injury

Twelve unintentional injury deaths occurred in children and adolescents aged 9 to 17, with 83% of the deaths among boys. Selected age, sex and race specific rates per hundred thousand can be seen in Table 4. Among the youth 15 to 17 years old, the rate of unintentional injury among black males was three times that of white, for a rate per hundred thousand of 6.82 compared to 2.23 per hundred thousand. The same disparity can be seen among the children 10 to 14 years old, for a rate among black males of 3.91 per hundred thousand compared to 1.28 per hundred thousand among white males.

The Team was disturbed by the circumstances of the 12 unintentional injury firearm deaths that demonstrated a range of behavior, from playful to reckless. In nine of these deaths, children and

		ed Firearm U r hundred the		•	•	
	Male			Female		
Age Group	No.	Population	Rate	No.	Population	Rate
10 to 14						
White	2	155,921	1.28	0		
Black	2	51,038	3.91	0		
15 to 17						
White	2	89,578	2.23	1	84,320	1.18
Black	2	29,313	6.82	0		

adolescents were either playing with the firearms or showing them to their friends. For example, while visiting a friend the victim asked to see a firearm on a shelf and was shot as the friend handed over the gun. Similarly a youth examining a shotgun was startled and fired the weapon, killing another youth in the room. In addition, adolescents shot themselves while recklessly playing with a handgun. Typically the victim pulled out a gun and asked others to play "Russian roulette." These were not the classic Russian roulette scenarios where a group of people pass a revolver around with one bullet in the chamber. In these cases, the youth were with friends, but the others did not handle the firearm, and in some cases tried to get the victim to put the gun away.

As with the other fatalities, handguns were involved most frequently, accounting for 83% of the deaths. In the remaining two deaths, shotguns were involved. All but one of these firearms was a household weapon and seven were kept loaded.

IV. Profile of Firearm Fatalities

This section summarizes the impressions and observations of the Team as a result of its in depth review of medical examiner reports, law enforcement reports, Court Service Unit records, education records, Child Protective Services (CPS) records, medical records, and other records available on individual cases. The issues and themes that emerged from the case records and from the multidisciplinary discussions of the Team are highlighted here.

Toxicology Results

Toxicology results were available on 60 of the 63 firearm fatalities reviewed. Ten percent had positive results for alcohol or illegal drugs. Alcohol and marijuana were found in one case, heroin was found

in one case, and in four cases alcohol was found. In its review of toxicology results, the Team found that marijuana, amphetamine, and inhalant screens were not part of the routine toxicology requested by the medical examiner or performed by the Division of Forensic Science. In addition, in several cases only alcohol screens were done. Because alcohol and marijuana are drugs of choice for this age group and because of inconsistent toxicology screens, the Team believes that the toxicology results reported here may underestimate the drug status of these youth at the time of their death.

Drugs: Part of the Picture

In this review the Team found that 21 (33.3%) of the children or adolescents had either a direct or indirect link to illegal drugs. This could include personal drug use by the youth, drug dealing by the youth, or parental drug use or dealing. While drugs were the precipitating cause in only eight deaths, the case review impressed upon the Team that the presence of drugs in the lives of these children was significant even if the shooting itself was not drug related.

Access to Firearms in the Home

When the firearm used in the fatality was a household weapon, the Team collected information regarding storage practices for the firearm and ammunition. Recommended safe storage practices for firearms in the home include: keeping the firearm unloaded, storing the weapon in a locked location, and storing the ammunition in a separate location. Of the 34 deaths where a household weapon was used, the method of storage of the weapon was documented in only 19 of the cases. Nine of the firearms were stored unlocked in a cabinet, closet, bedside table, or other piece of furniture. Five of the firearms were out in the open, on coffee tables, shelves, dressers, or in the case of a shotgun, leaning against a piece of furniture. Five of the firearms were stored in locked cabinets or boxes. In each of these cases the children and youth knew where the keys were stored. Of the firearms kept unlocked or out in the open, 10 handguns and one shotgun were kept loaded. The ammunition was stored separately in five cases.

A number of national population based surveys have found similar results. For example, a study by the National Institute of Justice on gun ownership in the United States found that more than half of the firearms were stored unlocked and 16% were stored unlocked and loaded. Handguns were more frequently kept loaded than long guns.^x Similarly, a national telephone survey by Hemenway, et al. found that 21% (170 of 800) of gun owners kept firearms unlocked and loaded. Of the households with children under 18, 14% (43 of 311) kept firearms unlocked and loaded.^{xi} Moreover, other studies that examined firearm storage practices have found similar results.^{xii xiii} These studies indicate that people routinely disregard safe storage practices for firearms and keep weapons loaded and unlocked even with children in the home. While the findings in this fatality review are limited by the small number of cases where gun storage practices were documented, the review does suggest that national surveys on gun ownership and storage practices are relevant to Virginia gun owning households.

Owners of Firearms

To further characterize the firearms in these fatalities, the Team attempted to determine who owned the firearm. In 17 cases, or 27% of these deaths, the child's parent or parents owned the firearm. The child owned the weapon in four or 6% of the deaths and another relative owned the weapon in three or 5% of the deaths. A friend or friend's parents owned the firearm in eight or 13% of the deaths. In 32 or 51% of the deaths the owner of the weapon was not known. Of note, in the homicide cases where the identity of the perpetrator was known, four of them were under the age of 18. Since youth are not legally entitled to purchase firearms or ammunition, the Team felt that access to firearms by juvenile offenders is a serious problem. This is supported by a recent study on juvenile offenders by the Department of Criminal Justice Services that found a 115% increase in firearm homicides committed by juveniles between 1989 and 1990.^{xiv}

Handling Firearms

The Team identified 15 deaths or 24% of all firearm deaths in 1994 that were a consequence of children and adolescents playing with firearms. These deaths could be classified as homicide, suicide, or accident depending upon the circumstances of the incident. The Team defined "playing with a firearm" as children and youth handling firearms, showing them to friends, or less typically actually shooting the firearm as a game. Most of these deaths occurred because a youth was showing a household firearm to a friend. In only two cases were the children simply shooting guns as part of play. In three cases, the youth were recklessly handling guns and asking their friends to play Russian roulette. Among the children just handling firearms, only two children were under the age of 14; the remaining 13 youth were 14 to 17 years old. Eighty-eight percent of these deaths were among boys.

Characteristics of the Children and Adolescents

The Team used a standard protocol to request the law enforcement, medical examiner, educational, court service unit, social service, mental health and medical records of the children in the review and gathered information that helps to characterize the children and adolescents who died. Although every effort was made to obtain complete information, the quantity and quality of the records obtained varied considerably. This is an inherent weakness of retrospective record review. Nevertheless, these data provide a unique window or snapshot about this group of children and adolescents who died from firearm injuries. While the circumstances of the firearm death may have been different, these children and youth have a number of characteristics in common, including: school problems, psychiatric or behavior disorders, prior victimization, and substance abuse.

Overall 36 of 59 or 61% of the school age children had problems in school. School problems included suspension, discipline, expulsion, retained, dropout and absenteeism. As a group they did not perform well, 43% obtained grades in the D to F range, 19% obtained grades in the C to D range, 22% in the B to C range, 7% in the A to B range and 2% or one student had an A average. Poor school performance as well as the problems described above cut across all manners of death including homicide, suicide, and unintentional injury. Moreover, 43% of these fatalities had been involved with the juvenile justice system for criminal charges. Again, juvenile justice system involvement cut across all firearm fatalities (Table 5). Poor school performance and juvenile justice system involvement are both established risk factors for violent death by suicide and homicide.

Sixteen of 63 or 24% of the children carried psychiatric or behavioral disorder diagnoses before their death. This characteristic also cut across all the manners of death. Among the suicides, 33% carried a diagnosis of attention deficit hyperactivity disorder (ADHD), adjustment disorder, conduct disorder, depression or had a combination of these conditions. Among the unintentional injury deaths, 33% carried a diagnosis of either ADHD, conduct disorder, major

	Homicide No. (%)	Suicide No. (%)	Unintentional No. (%)	Legal Intervention No. (%)	Total	Percent
None indicated	7 (24)	7 (33)	4 (33)	0	18	29
JJS only	2 (7)	1 (5)	0	0	3	5
JJS, School	12 (41)	2 (10)	0	0	14	22
JJS, Psych	0	1 (5)	0	0	1	1.6
JJS School, Psych	4 (14)	1 (5)	2 (17)	0	7	11
School only	4 (14)	4 (19)	3 (25)	1 (100)	12	19
School, Psych	0	2 (10)	1 (8)	0	3	5
Psych Only	0	3 (14)	2 (17)	0	5	8
Total	29 (100)	21 (100)	12 (100)	1 (100)	63	100

depression or learning disability. Among the homicides, 13.7% carried a diagnosis of either conduct disorder, depression, or ADHD (Table 6).

In addition, the Team identified several adolescents who had symptoms of significant behavioral or affective disorders who did not receive services at their schools or other agencies with whom they had contact. Within the school systems these youth were seen primarily as discipline problems and not as individuals in need of mental health treatment. Within the juvenile justice system, in two cases youth in need of treatment in a residential facility could not be accommodated due to funding issues or lack of an

appropriate placement. Furthermore, nine of 27 or 33% of the youth in the juvenile justice system carried a psychiatric diagnosis. This finding is similar to a Joint Legislative Audit and Review Commission 1995 study of the juvenile correctional system that found that 38% of the youth in the system had psychiatric prior received treatment to incarceration.^{xv} Again while the firearm fatality review is not a representative sample of either youth in school or youth in the juvenile justice system, these cases indicate a need for an enhanced capacity for the identification and treatment of children and youth with psychopathology. This conclusion is supported by studies that indicate children and youth in need of mental health services are under served.^{xvi}

Table 6.

	Homicide No. (%)	Suicide No. (%)	Unintentional No. (%)	Legal Intervention No. (%)	Total	Percent
None Indicated	25 (86)	14 (66)	7 (58)	1 (100)	47	75
AD	0	1 (5)	0	0	1	1.6
AD, Depression	0	2 (10)	0	0	2	3
ADHD	1 (3)	2 (10)	1 (8)	0	4	6
ADHD, CD	0	1 (5)	0	0	1	1.6
CD	0	0	2 (17)	0	2	3
CD/Bipolar	0	1 (5)	0	0	1	1.6
CD/Depression	1 (3)	0	0	0	1	1.6
Depression	2 (7)	0	1 (8)	0	3	5
Learning Disability	0	0	1 (8)	0	1	1.6
Total	29 (100)	21 (100)	12 (100)	1 (100)	63	100

AD = Adjustment Disorder

CD = Conduct Disorder

This group of children also received services sometime in their lives from a variety of other public agencies. Overall, 44% received benefits from the Department of Social Services (DSS), 13% received services from Child Protective Services and 11% received services from a Community Services Board. Among the homicides, 19 of 29 or 66% had received benefits from the DSS. This finding again highlights the association of poverty and violent death (Table 7). The Team believes that a number of these children and youth might have been better served by coordination of services and inter-agency cooperation that is now fostered by the Comprehensive Services Act.

Prior victimization or a history of violence was also evident among these children. Eight children had a founded CPS case for abuse or neglect sometime in their lives and record review indicated that another seven children had been subjected to physical, emotional, or sexual abuse, neglect or domestic violence. Thus 15 of 63 or 24% of these children had

	Homicide No. (%)	Suicide No. (%)	Unintentional No. (%)	Legal Intervention No. (%)	Total	Percent
None Indicated	9 (31)	12(57)	9 (75)	1 (100)	31	49
DSS only	14 (48)	4 (19)	2 (17)	0	20	32
DSS, CPS	3 (10)	1 (5)	0	0	4	6
DSS, CSB	0	1 (5)	0	0	1	1.6
DSS, CPS, CSB	2 (7)	0	1 (8)	0	3	5
CPS	0	1 (5)	0	0	1	1.6
CPS, CSB	1 (3)	0	0	0	1	1.6
CSB	0	2 (10)	0	0	2	3
Total	29 (100)	21 (100)	12 (100)	1 (100)	63	100
DSS=Department						

Prior Victimization and Violence of Children and Adolescents, N=63

	Homicide No. (%)		Unintentional No. (%)	Legal Intervention No. (%)	Total	Percent
None Indicated	22 (76)	15 (71)	10 (84)	1(100)	48	76
Prior CPS	6 (21)	1 (5)	1 (8)		8	13
Other abuse/violence	1 (3)	5 (24)	1 (8)		7	11
Total	29 (100)	21 (100)	12 (100)	1 (100)	63	100

Prior CPS=Founded abuse or neglect complaint prior to the death.

Other abuse/violence refers to physical, sexual, or emotional abuse, neglect, or domestic violence

been subjected to a form of abuse, neglect, or violence sometime in their lives (<u>Table 8</u>). Among the eight children who had a prior CPS case, there were six homicides, one unintentional injury death and one suicide. Among the seven children who had a history of abuse, neglect, or domestic violence, but no CPS record, there was one homicide, one unintentional injury death and five suicides. The relationship between victimization in childhood and the risk for later victimization or the risk of juvenile delinquency is a growing area of research and concern.^{xvii}

Population based research indicates that substance abuse and alcohol use among adolescents is quite common. The 1995 results of the national Youth Risk Behavior Survey conducted by the Centers for Disease Control and Prevention found significant drug and alcohol use among students in grades 9 through 12. Students surveyed reported during their lifetime 80.4% had at least one drink of alcohol, 42.4% had used marijuana, 7% had used cocaine, 4.5% had used crack and 20.3% had used inhalants.^{xviii} The Team's review of records indicated that seven or 11% of these youth had used drugs, two or 3% had used alcohol, and two or 3% had used drugs and alcohol. In addition, eight or 13% of these youth had been drug dealers. Based on this research and the patients seen in the practices of our Team members who are pediatricians, the team suspects that the frequency of drug and alcohol use found in the review is probably an underestimate of the actual drug and alcohol use of the children and youth studied.

Characteristics of Families

The Team also collected information regarding the families of the children who died as a result of firearm injury. Since the Team only reviewed the

	Homicide No. (%)			Legal Intervention No. (%)	Total	Percent
Unknown	15 (52)	10 (48)	9 (75)	0	34	54
Divorce only	2 (7)	5 (24)	2 (17)	1 (100)	10	16
Div, DV	0	1 (5)	0	0	1	1.6
Div, Alcohol/Drug/MI	3 (10)	5 (24)	0	0	8	13
DV, Alcohol/Drug	1 (3)	0	0	0	1	1.6
MI/Alcohol/Drug	3 (10)	0	0	0	3	5
Drug only	4 (14)	0	0	0	4	6
Mental Illness only	1 (3)	0	1 (8)	0	2	3
Total	29 (100)	21 (100)	12 (100)	1 (100)	63	100

Drug=Parental drug use

children's records, family information was limited in most cases, unless the child had received services from the schools, CPS, or the juvenile justice system. The Team feels that the information that follows is important, even though it may not reflect the actual prevalence of these problems in the community or even among the firearm fatalities reviewed.

In case files the Team found information about the families regarding drug use, alcoholism, divorce, mental illness, and domestic violence. Overall, 29 of 63 or 46% of these children lived in families with one or more of these characteristics (Table 9). Information regarding with whom the children lived was also available in the case records. Thirty-six percent of the children lived with their parents, 33% lived with a single parent, 13% lived with a parent and another adult, 6% lived with their grandmother, 3% lived with their grandparents, 6% lived with other relatives and for the remaining 3% it could not be determined with whom they lived (Figure 37).

In 13 of 63 or 21% of the cases the Team felt that dysfunction and instability in the family contributed to the poor outcome for the child. In these cases, problems like parental alcoholism, drug use, and incarceration often led to multiple placements for the child beginning early in life. Moreover, most of these children had also been victims of abuse or neglect. As adolescents these children exhibited a number of anti-social behaviors and were the most troubled children whose deaths the Team reviewed. The Team felt that termination of parental rights or some other more permanent remedy early in life may have given the child a chance for a better outcome.

V. Preventable Deaths

The Team defines a death as preventable if reasonable interventions, either medical, educational, social, legal or psychological might have prevented the death. Examples of preventable deaths as defined by the Team, may include a suicide where the child had had previous suicide attempts and firearms were readily accessible in the home or an unintentional injury death where the firearm was stored in a careless manner. A preventable death may also include a case where early intervention in the child's life may have resulted in the child receiving the stability and nurturing that all children need to lead healthy lives. The point of intervention could have been at any level and at any time in the child's life. The Team determined that 27 or 43% of the fatalities could have been prevented had reasonable measures been taken. These preventable deaths included 14 suicides, 10 unintentional injury deaths, and three homicides. In addition, the Team concluded that had ideal resources been available, another 16 or 25% of these deaths could have been prevented. These deaths included 11 homicides, three suicides, and two unintentional injury deaths.

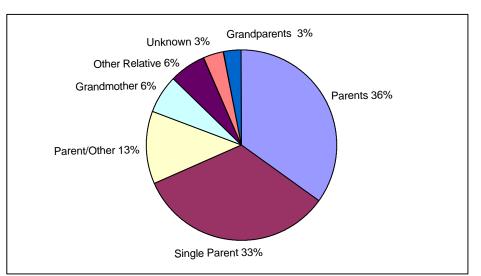


Figure 37. Firearm Fatalities Lived With, Virginia 1994, Total=63

VI. Summary and Recommendations

Discussion

The Team's review revealed several patterns in firearm fatalities among children and adolescents in Virginia in 1994. Boys were more frequently the victims of firearm death than girls, handguns were the most frequently used firearms, and black children and youth were disproportionately represented. Other features of these deaths that stand out include the risks associated with firearms in the home and the prevalence of risk factors for violent death exhibited in these cases. Lastly, the Team identified two areas where the investigation of child and youth firearm death could be enhanced.

First, our review is consistent with previously published findings regarding the risk of homicide, suicide and unintentional injury death by firearms in the home. Thirty-four or 54% of these fatalities (3 homicides, 20 suicides, 11 unintentional injury deaths) were injured with a household firearm. The careless storage of firearms was documented in a number of cases and national studies have found that unsafe storage of firearms among gun owners is common. Since gun ownership is so prevalent in American society, parents need to be aware that the safety of their children can depend upon their own firearm safety storage practices and the storage practices of others. Fifteen of these deaths occurred in the context of children and adolescents playing with firearms. And in all but one of the suicide deaths, a household firearm was used.

In addition to the unsafe storage of firearms found in this review, the Team believes that adolescent development issues may also help explain some of these deaths. Adolescents' belief in invincibility, their natural curiosity, immaturity, impulsiveness and substance abuse may be contributing factors in firearm fatality.^{xix} As seen in this review, access to firearms in the home, combined with the normal developmental characteristics of adolescents, can be a fatal combination.

The Team feels that the problem of access to household firearms by children and adolescents can be addressed by education and legislation. Parents can be educated about the risks for homicide, suicide and unintentional injury in the home associated with gun ownership and can make informed decisions about obtaining and storing firearms. The Government Accounting Office of the United States estimates that safety features, such as trigger locks and loading indicators can reduce unintentional firearm injury by 31%.^{xx} These types of safeguards can be implemented through legislation or other formal mechanisms.

Secondly, the Team found that many of the homicide and suicide victims had known risk factors for violent death. Twenty-two or 76% of the homicides and 14 or 66% of the suicides had either juvenile system involvement, problems in school, or psychiatric diagnoses. In addition, 19 or 66% of the homicides lived in poverty. The Team identified several points of intervention to address the needs of children and adolescents with risks for violent death. First, efforts to strengthen families and to provide permanency planning for children are early interventions that may improve the lives of children. Secondly, the school systems can improve their ability to identify children with psychopathology and risks for suicide. Third, since many youth in the juvenile justice system have documented psychological problems, it can seek ways to address those needs.

Lastly, the Team identified several ways in which death investigations of children and adolescents can be enhanced. The toxicology screens routinely requested and performed can be expanded to include those substances older children and adolescents are likely to use, including marijuana, amphetamines, and inhalants. Law enforcement agencies can work to enforce laws regarding access to firearms by children, and if a child dies from firearm injury, law enforcement should conduct investigations regarding ownership of the firearm and storage practices.^{xxi} Finally, training for law enforcement on adolescent suicide and adolescent development may help reduce poor outcomes when law enforcement encounters youth.

As the Team reviewed these deaths and later grappled with its findings, the tragedy of firearm fatality in children and youth could not have been more compelling. Children and youth die from firearm injury at unacceptable levels in Virginia. The Team offers the following consensus recommendations to the Governor, the General Assembly and to the citizens of the Commonwealth with the expectation that we can and will take action to reduce firearm death in children and adolescents.

Recommendations

Ways to Improve Child and Adolescent Death Investigation

- 1. We recommend that the Medical Examiner request and that the Department of Criminal Justice Services, Forensics Science Division perform full toxicology screens, including marijuana, amphetamines, and inhalants on all sudden, unexplained, or violent deaths in children under the age of 18 years old.
- 2. We recommend that in all child and adolescent deaths due to firearms, law enforcement personnel conduct an investigation to determine the ownership and storage of those firearms to support prosecution under §18.2-56.2 regarding access to firearms by children.

Provide Training for Law Enforcement and School Personnel

- 3. We recommend that the Department of Criminal Justice Services encourage local law enforcement training academies to utilize the model lesson plan Objective 9.0 regarding Mentally Ill/Abnormal Behavior and to expand training to include adolescent development issues and protocols for crisis response to suicidal children and youth.
- 4. We recommend that the Virginia Department of Education offer grants to provide training to regular classroom teachers and school administrators on the psychopathology of children so that they may more effectively address child psychopathology in educational settings.

Early Intervention, Strengthening Families and Access to Mental Health Services

- 5. We recommend continued support for the Supreme Court of Virginia's Court Improvement Project to improve permanency planning for children.
- 6. We recommend that the General Assembly increase funding for prevention and early intervention services such as Healthy Families, Resource Mothers, and Family Resource Centers to strengthen families before problems become severe.
- 7. We recommend that additional resources be made available to all youth in the juvenile justice system to ensure equal access to a wide range of mental health services.

Prevention of Firearm Injury through Education

- 8. We recommend that the Virginia Department of Health's Center for Violence and Injury Prevention make firearm safety a priority.
- 9. We recommend that each school division ensure that that the content of its elementary, middle, and secondary school curricula covers effective firearm safety practices.

Suicide Prevention

- 10. We recommend that the Virginia Department of Education develop a model protocol for school personnel to identify and respond to a potential suicide among members of the student body.
- 11. We recommend that each school division include suicide prevention in its elementary, middle, and secondary school curricula.
- 12. We recommend that health assessments by medical professionals for children and adolescents include risk assessments for depression, suicide, and the availability of firearms in the home.

Prevention through Legislation

- 13. We recommend that legislation be enacted to require that all new firearms sold in Virginia include child safety trigger locks.
- 14. We recommend that legislation be enacted to require that all firearm dealers provide firearm safety information to purchasers of firearms.