VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

Office of the Chief Medical Examiner's Annual Report, 2007

Commonwealth of Virginia
Virginia Department of Health
Office of the Chief Medical Examiner
November 2008

OFFICE OF THE CHIEF MEDICAL EXAMINER'S ANNUAL REPORT, 2007

Leah L. E. Bush, MD
Current Chief Medical Examiner

Marcella F. Fierro, MD
Former Chief Medical Examiner

Central District

400 East Jackson Street
Richmond, VA 23219
(804) 786-3174

OCME_CENT@vdh.virginia.gov

Assistant Chief Medical Examiners
William T. Gormley, MD, PhD
Deborah Kay, MD
Kevin D. Whaley, MD

Northern District

9797 Braddock Road, Suite 100
Fairfax, VA 22032
(703) 764-4640

OCME_NOVA@vdh.virginia.gov

Assistant Chief Medical Examiners
Frances P. Field, MD
Constance R. DiAngelo, MD
Todd M. Luckasevic, MD
Mark Shelley, MD

http://www.vdh.state.va.us/medexam/index.asp

Tidewater District

830 Southampton Ave., Suite 200
Norfolk, VA 23510
(757) 683-8366

OCME_TIDE@vdh.virginia.gov

Assistant Chief Medical Examiners
Leah L.E. Bush, MD
Wendy M. Gunther, MD
Elizabeth L. Kinnison, MD

Western District

6600 Northside High School Road
Roanoke, VA 24019
(540) 561-6615

OCME_WEST@vdh.virginia.gov

Assistant Chief Medical Examiners
Amy Tharp, MD
Christena Roberts, MD
William Massello, III, MD

Office of the Chief Medical Examiner's Annual Report, 2007
Department of Health
Commonwealth of Virginia

Table of Contents

Letter from the Chief Medical Examiner

The Virginia Department of Health's Office of the Chief Medical Examiner (OCME) has prepared a report of its activities for 2007. This report is intended to be used by the leaders and citizens of the Commonwealth to better the lives of all Virginians.

As mandated by the Code of Virginia, § 32.1-283, the OCME investigates the deaths of individuals who die in Virginia either suddenly and unexpectedly, unattended by a physician, violently, under suspicious circumstances or in law enforcement custody. The primary mission of the OCME is a medicolegal one to determine and certify the cause and manner of death, collect medical and forensic evidence, and reconstruct how injury and death occurred. The medical examiner assists the criminal and civil justice system by investigating violent death and providing expert witness testimony in court proceedings. The medical examiner's less recognized mission is one of public health accomplished by documenting potentially preventable injury and death and by conducting surveillance for deaths from disease processes hazardous to the public. The OCME is also responsible for mass fatality management resulting from catastrophic natural events, terrorist acts, large scale accidents and mass murder or suicide.

Dissemination of this report to agencies and community leaders having the power to effect change and create prevention strategies aimed at reducing death is crucial. Accidents can often be prevented by following current safety guidelines or by the development of new innovations derived from interpretation of the data in this report. Suicide is the result of lost hope and despair and often occurs after individuals reach out for help from their loved ones and communities. This call for help needs to be recognized and acted upon by individuals, agencies and the community as a whole. For those who do not or cannot ask for help, the development of outreach and intervention programs is critical. Homicide in our communities demonstrates a breakdown of our society on many levels. Concerted efforts directed at altering high risk life styles and breaking the cycle of violence need to be continually promoted by health, mental health, criminal justice, legislative and other professionals.

The dedicated OCME staff serves Virginia's citizens from the beginning through the end of their lives. They are the voice of those unable to tell their own story. I am optimistic that the efforts of the OCME will inspire others to value and promote healthy living thereby increasing the quality and quantity of life for all Virginians. OCME forensic epidemiologist, Dr. Anna Noller, carefully and thoughtfully analyzed a mass of information and organized it into the important and valuable data presented in this report.

As the new Chief Medical Examiner for the Commonwealth of Virginia, this is the first Annual Report produced under my direction. The data collection for this project occurred under the supervision of Doctor Marcella Fierro, the former Chief Medical Examiner, prior to her retirement on December 31, 2007. Doctor Fierro's leadership and vision have advanced Virginia's death investigation system as a model for the entire nation. As the new Chief my intention is to continue her legacy.

Leah Bush, M.D., M.S.
Chief Medical Examiner
Commonwealth of Virginia
November 4, 2008

Introduction

This report presents the deaths investigated by the Virginia Department of Health, Office of the Chief Medical Examiner in 2007.

Data Collection and Preparation

The data in this report represent deaths accepted by the Office of the Chief Medical Examiner (OCME) pursuant to §32.1-283 of the Code of Virginia for the 2007 calendar year. These deaths are both Virginia residents and non-residents whose deaths generally occurred within the borders of the Commonwealth of Virginia. The Virginia OCME classifies these deaths by its own coding schema which differs from mortality data published by other OCME surveillance groups, law enforcement agencies, the Virginia Division for Health Statistics, and the Centers for Disease Control & Prevention. Therefore, any discrepancies between data presented by the OCME and other nosology groups are the result of data collection and analytic variations among these groups.

Statistical Summary

- Data entitled "Total Cases" is based on both Virginia residents and non-Virginia residents who have come under the jurisdiction of the Office of the Chief Medical Examiner.
- Rates are based on only Virginia residents (Residential Rates).
- Rate are per 100,000 of the specific population being described.

SECTION 1: OVERVIEW- OFFICE OF THE CHIEF MEDICAL EXAMINER

In 1946, Virginia became one of the first states to institute a statewide medical examiner system. In that same year, the General Assembly of Virginia abolished the Office of Coroner's Physician and appointed a Chief Medical Examiner. Four years later, in 1950, the Office of the Chief Medical Examiner (OCME) became an office within the Virginia Department of Health. The OCME has 4 district offices to serve the citizens of the Commonwealth.

Virginia 2007

In 2007, the estimated population of the Commonwealth was 7,712,091, ranking 12th among the states. Virginia has a land area of 39,594 square miles, ranking 37th among the states. Virginia's population density is 195 persons per square mile, although an estimated 85.5 percent of the population lives in urban areas. Racially, whites constituted 74 percent of the population, blacks 20.5 percent, Asians 5.2 percent, and Native Americans 0.39 percent. Hispanics, who may be of any race, were 6.6 percent of Virginia's people. The median household income in 2007 was $59,562.

Jurisdictional Authority

Pursuant to § 32.1-283 of the Code of Virginia, all of the following deaths are investigated by the OCME:

- Any death from trauma, injury, violence, or poisoning attributable to accident, suicide or homicide;
- Sudden deaths of persons in apparent good health or deaths unattended by a physician;
- Deaths of persons in jail, prison, or another correctional institution, or in police custody (this includes deaths from legal intervention);
- Deaths of patients/residents of state mental health or mental retardation facilities;
- Sudden death of any infant less than eighteen months of age whose death might be attributable to Sudden Infant Death Syndrome; and
- Any other suspicious, unusual, or unnatural death.

In Virginia, local medical examiners, the backbone of our medical examiner system, conduct a medicolegal death investigation, serving as the principal case investigator in their locality for deaths falling within their jurisdiction and statutory authority. The OCME currently supports more than 250 local medical examiners, who receive the initial notification of death and determine if the death should come under the jurisdiction of the medical examiner. Local medical examiners may examine the body, collect a toxicology sample, and

sign the certificate of death on medical examiner cases or, using professionally established guidelines, refer certain classes of cases for more intensive death investigation and medicolegal autopsy.

When an autopsy is required, it is conducted in one of four district offices: Northern, Tidewater, Central or Western. Each district is staffed by American Board of Pathology certified forensic pathologists, investigators certified by the American Board of Medicolegal Death Investigators, and administrative and morgue personnel. The Chief Medical Examiner, Dr. Leah L.E. Bush, is based in the Richmond office and is responsible for the overall operations of the state's medical examiner system.

The overall vision of the OCME is to be the best medical examiner system in the world. There are two separate parts of the mission that form the core of OCME staff members' efforts in accomplishing this goal:

Medicolegal Mission

- Conduct medicolegal death investigations.
- Perform autopsies to certify cause and manner of death and recover evidence.
- Testify in court proceedings.
- Provide public service to citizens and professional colleagues throughout the Commonwealth.
- Educate peers and professionals on subjects related to death investigation.
- Administer the State Anatomical Program.

Public Health Mission

- Reduce violent death by conducting surveillance and fatality review.
- Provide support and technical assistance to local fatality review teams.
- Identify index cases and pathogens in disease outbreaks in the interest of public health.
- Cooperate with organ procurement organizations to save lives through organ donation and transplantation.

Virginia's medical examiners and forensic pathologists are committed to public safety and public health. To promote public safety, they testify to their findings in civil and criminal courts throughout the Commonwealth. They advance public health through their investigations of deaths that present a hazard to Virginia's citizens, such as emerging infections and bioterrorism. This report describes medical examiner activities for the 2007 calendar year.

Fatality Review and Surveillance Programs

In addition to conducting medicolegal death investigations to identify the cause and manner of death, the OCME oversees several public health surveillance projects and fatality review teams. Surveillance projects include the Family and Intimate Partner Violence Homicide Surveillance Project (FIPV) and the Virginia Violent Death Reporting System (VVDRS). Fatality review is performed on child and maternal deaths at the state level, and on child and domestic violence related deaths at the local and regional level.

These activities are designed to provide a better understanding of the circumstances of death so that legislators, policy makers, and other stakeholders can make informed decisions concerning injury and violence prevention programs. Surveillance projects and fatality review teams allow something good to come from the violence and destruction of human life. A description of each of these efforts follows.

The **Family and Intimate Partner Violence Homicide Surveillance Project** (FIPV) was established in 1999 to describe the magnitude of lethal domestic violence in Virginia. Using death investigation records and news reports, the project captures six forms of domestic violence-related homicide: intimate partner, intimate partner associated, child by caregiver, elder by caregiver, other family, and family associated.

Tracking these deaths over a seven-year period reveals the following:

- Approximately one in three homicides involve conflict and violence between family members or intimate partners.
- Like other public health indicators, patterns in intimate partner homicide reveal clear racial disparities. Black Virginians are more likely to die from intimate partner violence than White Virginians.
- Infants continue to be our most vulnerable citizens.
- Risk factors associated with intimate partner violence, such as prior acts of violence and periods of separation or divorce, are also associated with intimate partner homicide.

Published reports from this project are available at:
http://www.vdh.virginia.gov/medExam/Violence.htm

The **Virginia Violent Death Reporting System** (VVDRS) was implemented in 2003 as part of the National Violent Death Report System (NVDRS). Virginia was among the first six states, and the first state-wide medical examiner system, to be funded for this project.

The VVDRS collects information about deaths due to violence (suicide, homicide, legal intervention, accidental firearm discharge, deaths of an undetermined manner, and deaths due to terrorism) and correlates victim information with the circumstances surrounding the death. Data from several sources, including forensic pathology, forensic science, law enforcement, vital records, and health statistics, are linked to provide a comprehensive picture of violent death in the Commonwealth of Virginia.

Data from the VVDRS have illustrated an increased suicide risk for older adults, especially males; the prevalence of mental health problems and subsequent treatment among persons who commit suicide; the warning signs that precede many suicides, such as disclosing intent to harm oneself or having prior suicide attempts; and an association between homicides with no clear precipitating circumstances and cocaine usage.

The VVDRS is funded by the Centers for Disease Control and Prevention (CDC). Published reports are available at http://www.vdh.virginia.gov/medExam/NVDRS.htm.

The **State Child Fatality Review Team** was established in 1995 by the Virginia General Assembly and the Governor of Virginia. The Team conducts multidisciplinary, retrospective reviews of the circumstances surrounding violent and unexpected child death and develops consensus recommendations for the prevention of future deaths. Team members include Commonwealth's attorneys, local fire and emergency medical services providers, and representatives from pediatrics, emergency medicine, child psychiatry, law enforcement, mental health, social services, forensic pathology, injury prevention, child advocacy organizations, and state agencies.

The Team has completed reviews and developed recommendations for prevention in the following areas of child death: firearm, suicide, unintentional injury to children under the age of five, caretaker homicide, and motor vehicle collision. Among other findings, the Team has identified family violence and economic instability as risk factors for homicide of young children and the significance of diligent adult supervision in

preventing unintentional injury death. It has also recognized the prevalence of motor vehicle collisions as the most frequent cause of child unintentional injury deaths.

Child fatality review is supported by the Virginia Department of Health, Office of Family Services with Title V funds from the U.S. Department of Health and Human Services, Maternal and Child Health Bureau. Published reports are available at: http://www.vdh.virginia.gov/medExam/ChildFatality.htm.

Domestic Violence Fatality Review was established in 1999 when the General Assembly enacted §32.1-283.3 of the Code of Virginia. This statute provides for the establishment of local/regional domestic violence fatality review teams, and directs the OCME to provide technical assistance and support to these teams.

Domestic violence fatality review has gained prominence and momentum in the last decade, both here in Virginia and across the United States. The purpose of domestic violence fatality review is to prevent future deaths by carefully examining the events that led to a fatality, analyzing system responses to those deaths, and improving a community's coordinated response to domestic violence. Multidisciplinary teams are formed at the local or regional level. Membership in these teams varies among localities, but generally includes representatives from law enforcement, Commonwealth's attorneys, social services, courts, probation and parole, domestic violence programs, and mental health/healthcare.

Virginia has made great progress in the area of domestic violence fatality review. Twelve local or regional domestic violence fatality review teams have been established. Reports published by Virginia's local teams provide information on the victims and perpetrators in these fatal incidents, as well as the lethality factors that shaped these tragedies. Teams have developed recommendations for improved community response when deadly violence occurs among family members or intimate partners.

The OCME published a Fatality Review Team Protocol (2nd Edition, 2002), which has served as a resource guide to help teams get started and work effectively. The growing body of information on this powerful public health tool is now being compiled by the OCME in a Resource Manual, which will be the first of its kind in the state and in the country.

Information on local domestic violence fatality review teams can be found at www.vdh.virginia.gov/medExam/Violence.htm#ViolenceReports.

Virginia's Maternal Mortality Review Team was established in March of 2002 as a partnership between the Office of Family Health Services and the OCME. The OCME provides coordination for the Team.

Virginia's team reviews all cases of death occurring to a woman who was pregnant at the time of death or who died within one year of a pregnancy, regardless of the cause or manner of death or outcome of the pregnancy. Systematic, retrospective review of all maternal deaths is undertaken for the purpose of understanding the circumstances surrounding the death so that recommendations and interventions can be made to prevent future deaths. The Team is a multidisciplinary group of professionals and includes representatives from the Medical Society of Virginia; Virginia Section of the American College of Obstetricians and Gynecologists; Virginia Chapter of the American College of Nurse Midwives; Association of Women's Health, Obstetrics and Neonatal Nurses; Virginia Chapter of the National Association of Social Workers; Virginia Hospital and Healthcare Association; Virginia Sexual and Domestic Violence Action Alliance; Virginia Dietetic Association; Regional Perinatal Councils; local health departments; and state planning agencies.

To date, the Team has focused on racial disparities in maternal mortality and identified intimate partner violence, substance abuse, mental illness, and obesity as risk factors for premature and preventable maternal death. In addition, motor vehicle incidents were identified as a major cause of death among women within one year of a pregnancy. Recommendations for prevention and intervention to address these factors have been promulgated.

Maternal mortality review is supported by the Virginia Department of Health, Office of Family Health Services with Title V funds from the U.S. Department of Health and Human Services, Maternal and Child Health Bureau. Published reports are available at:
http://www.vdh.virginia.gov/medexam/maternalmortality.htm.

Training and Education

Forensic Pathology Training Programs

Website — http://www.vdh.state.va.us/medExam/training.htm

The Virginia Commonwealth University School of Medicine (VCU), in conjunction with the OCME, offers Accreditation Council for Graduate Medical Education (ACGME) accredited fellowship training in the subspecialty of forensic pathology. The seven board-certified forensic pathologists of the Central and Tidewater District offices are the core faculty of the Department of Legal Medicine at VCU, and faculty in the Division of Forensic Pathology within the Department of Pathology at VCU. Medical Examiner's office staff has full access to facilities at VCU and its medical, dental, pharmacy, hospital administration, nursing, and other health science schools. The forensic pathology training program is designed to provide flexibility in training and experience depending upon the individual physician's career objectives.

- A rotation for the resident who needs exposure to forensic pathology as part of a general anatomic pathology program.
- A 12-month forensic pathology fellowship for the trainee desiring eligibility to take the American Board of Pathology examination in forensic pathology.

It is the aim of the forensic pathology training program that, by the end of the fellowship year, the trainee can adequately manage the great majority of medicolegal deaths with self-assurance and technical competence. The trainee will be ready to accept a position in all types of Medical Examiner/Coroner systems.

Pathology residents and medical students rotate through the OCME on month long rotations.

Virginia Institute of Forensic Science and Medicine

Website — http://www.vifsm.org/

The Virginia Institute of Forensic Science and Medicine, a 501(c) (3) organization founded in 1999, is a premier provider of hands on training in a working forensic environment for aspiring forensic scientists and pathologists. To the nation, VIFSM promotes a Virginia brand of justice forged from the cooperative efficiencies and innovations of its medical examiner system and forensic science laboratories. Over 200 world-renowned faculty members, many of whom are staff members of the Division of Forensic Science and Office of the Chief Medical Examiner, lend their expertise as foremost practitioners of all disciplines of forensic science and medicine. VIFSM offers state-of-the-art postgraduate fellowships as preparation for

careers in these forensic disciplines. Through its training seminars, VIFSM enhances the knowledge and performance of those engaged in the investigation of death and violent crime.

National Association of Medical Examiners Accreditation

The National Association of Medical Examiners (NAME) is the professional organization for physician medical examiners, medicolegal death investigators and death investigation system administrators who investigate deaths of public interest, either legal or public health, in the United States. NAME has developed an accreditation process to improve the quality of death investigation within medical examiner offices and systems. When an office is accredited by NAME, it is an endorsement that the office has provided an environment adequate for a medical examiner to practice his or her profession and that the office can serve its jurisdiction.

The accreditation process includes but is not limited to: inspection of facilities, review of facility and personnel safety, qualification of medical examiners, review of medical legal procedures, and review of reports and records. One requirement within the reports and records section is an annual statistical report, which OCME fulfills with this report. The following data is needed for the NAME requirement for the annual statistical report:

A. Deaths reported:	6517 cases
B. Cases accepted:	5968 cases (plus 110 retrospectives)
C. Manners of death:	Accident- 2404, Homicide- 443, Natural- 2094, Suicide- 906, Undetermined- 121
D. Scene visits:	973 or 16.3% of cases
E. Bodies transported by office:	Central- 1558, Northern- 692, Tidewater- 903, Western- 894
F. External examinations:	3026 cases
G. Complete examinations (autopsy):	2938 cases
H. Partial examinations:	4 cases
I. Hospital autopsies under ME jurisdiction:	11 cases
J. Cases with toxicology:	5192 or 87% of cases
K. Unidentified bodies after examination:	3 cases
L. Organ, tissue & eye donations:	338 donations
M. Unclaimed bodies:	4 cases
N. Exhumations:	1 case
O. Bodies transported to office:	Central- 1558, Northern- 692, Tidewater- 903, Western- 894

SECTION 2: TOTAL CASES (N=5968)

Since 1999 the number of deaths investigated annually by the OCME has increased by a total of 15.1 percent, while during the same time frame the population of Virginia has increased by 12.2 percent. In 2007, the OCME investigated 5,968 deaths, representing 10.3 percent of the estimated total deaths in Virginia. Of the deaths investigated by the OCME in 2007:

- The total number of deaths investigated represents a 2.0 percent increase from the 2006 total.
- The highest total number of deaths occurred in September, and the fewest in February. More deaths occurred on Saturdays than any other day of the week, and the least on Thursdays.
- The ratio of male to female deaths was 2.3:1. Decedents classified as white represented 70 percent of the total.
- While the City of Richmond continued to have the greatest number of homicides with 61 deaths, it saw a substantial decrease compared to 85 in 2006 and was followed closely by Norfolk with 53. Fairfax County experienced the greatest number of accidental and suicide deaths.
- Autopsies were conducted in 36.9 percent of cases due to accidental deaths, 98.6 percent of homicides, 36.9 percent of natural causes, 80.5 percent of suicides, 95 percent of undetermined deaths; for a total of 49.3 percent of all cases in 2007.
- Gunshot wounds were the cause of death in 837 deaths in 2007, 14 percent of all OCME cases. Of these 837 deaths, 803 were Virginia residents, resulting in a residential rate of gun deaths of 10.4/100,000 population.
- Whites represented the greatest proportion of cases by all manners of death except homicide in which blacks represented 58.4 percent of cases.
- The number of suicides (906) was 2 times greater than the number of homicides (443) in 2007.

Figure 1. Total Cases by Year of Death, 1999-2007

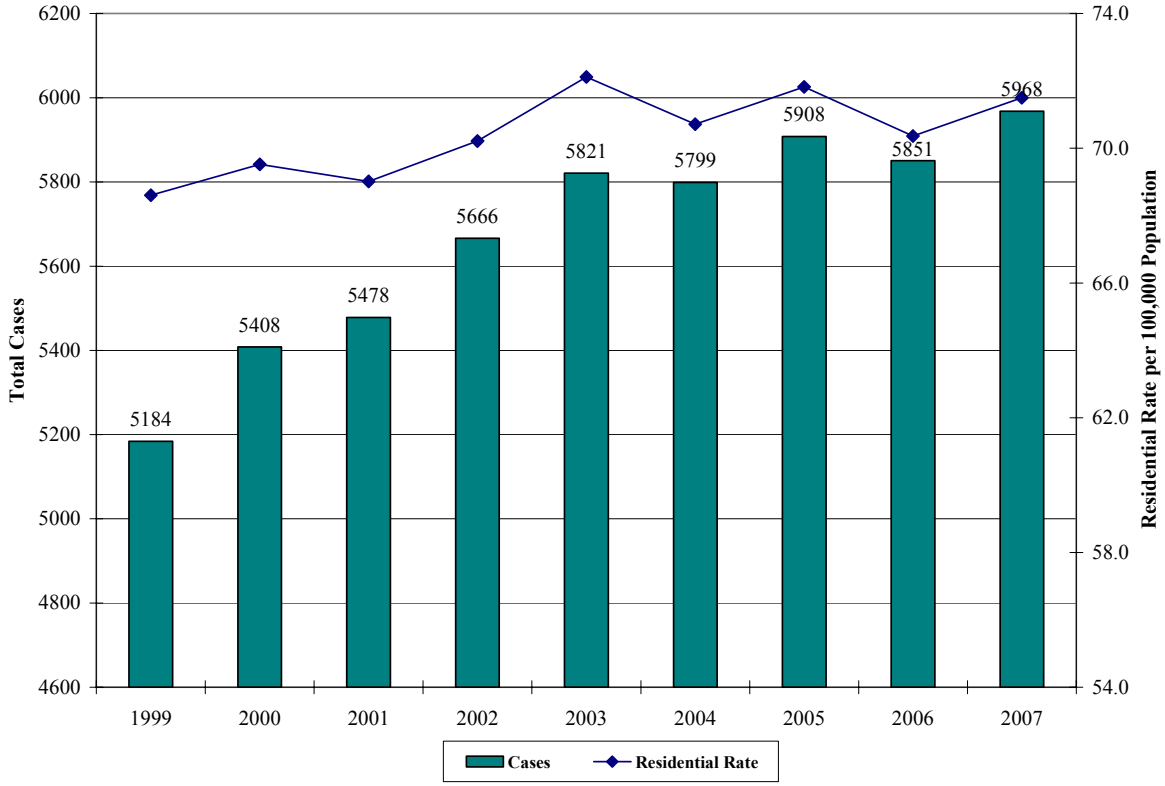


Table 1. Total Cases by Manner of Death by OCME District, 2007

	OCME-District				
Manner	**Central**	**Northern**	**Tidewater**	**Western**	**Total**
Accident	844	469	476	615	2404
Homicide	145	51	156	91	443
Natural	668	472	484	470	2094
Suicide	242	229	170	265	906
Undetermined	29	38	25	29	121
Total	**1928**	**1259**	**1311**	**1470**	**5968**

Figure 2. Total Cases by Month of Death, 2007

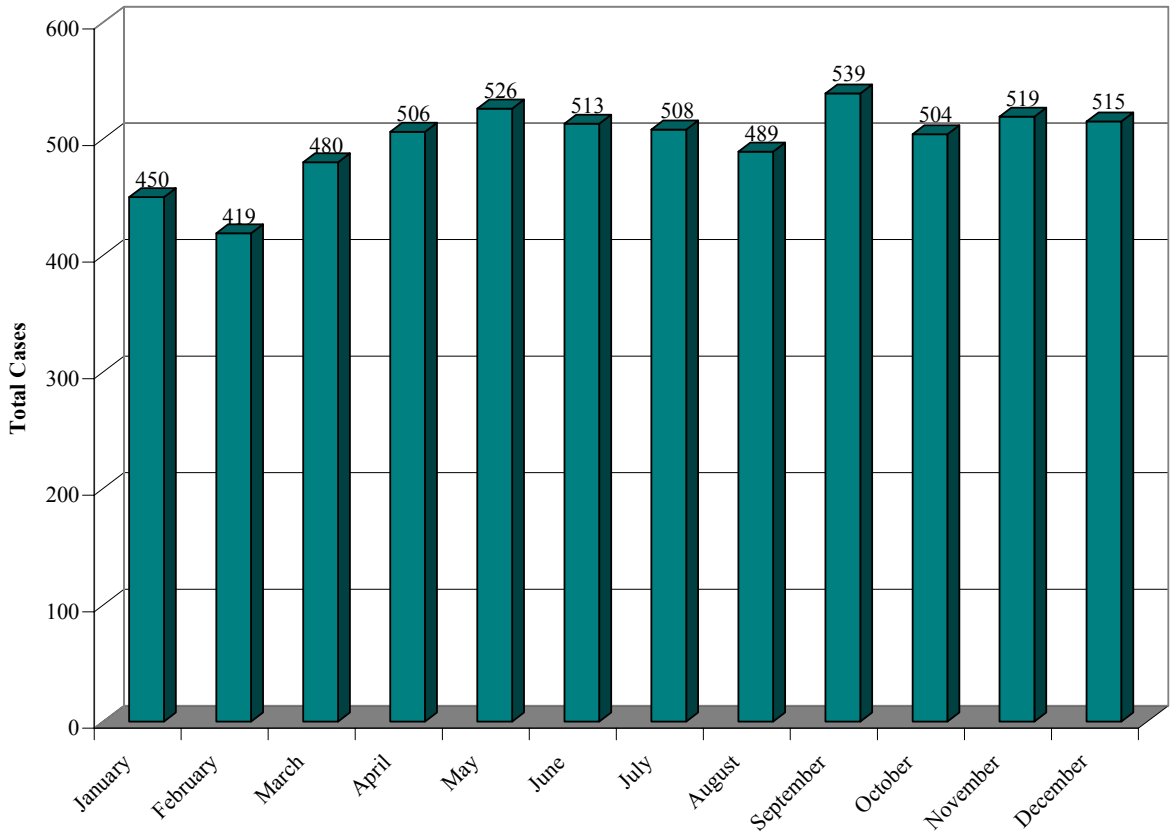


Figure 3. Total Cases by Day of Death, 2007

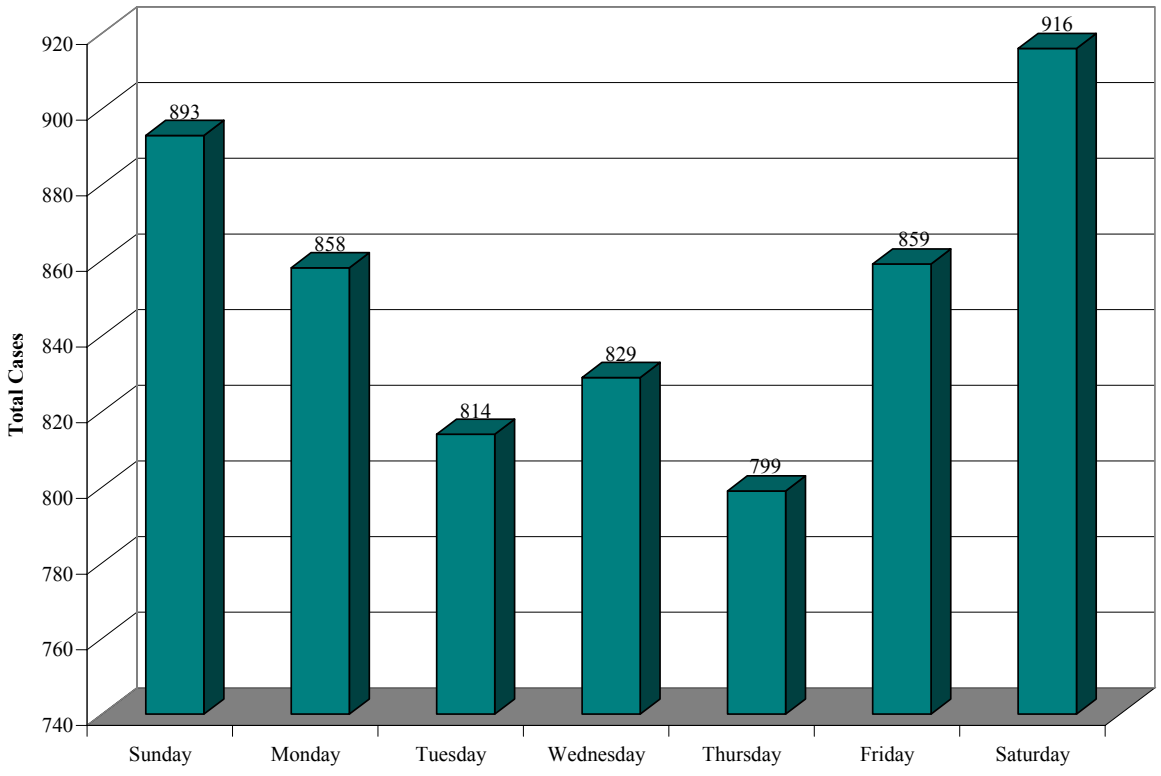


Table 2. Total Cases by Autopsy Status by OCME District, 2007

	Autopsy Performed		
OCME District	**Yes**	**No**	**Total**
Central	943	985	1928
Northern	637	622	1259
Tidewater	653	658	1311
Western	709	761	1470
Total	**2943**	**3032**	**5968**

Table 3. Total Cases by Gender, 2007

Gender	Cases	Percent
Male	4178	70.01%
Female	1789	29.97%
Unknown	1	0.02%
Total	**5968**	**100**

Table 4. Total Cases by Race/Ethnicity, 2007

Race/Ethnicity	Cases	Percent
Asian	105	1.76%
Black	1412	23.65%
Hispanic	241	4.04%
Indian*	26	0.44%
Native American	1	0.02%
Other	1	0.02%
Unknown	2	0.03%
White	4180	70.04%
Total	**5968**	**100%**

*Indian refers to subcontinental India

Figure 4. Total Cases by Age Group, 2007

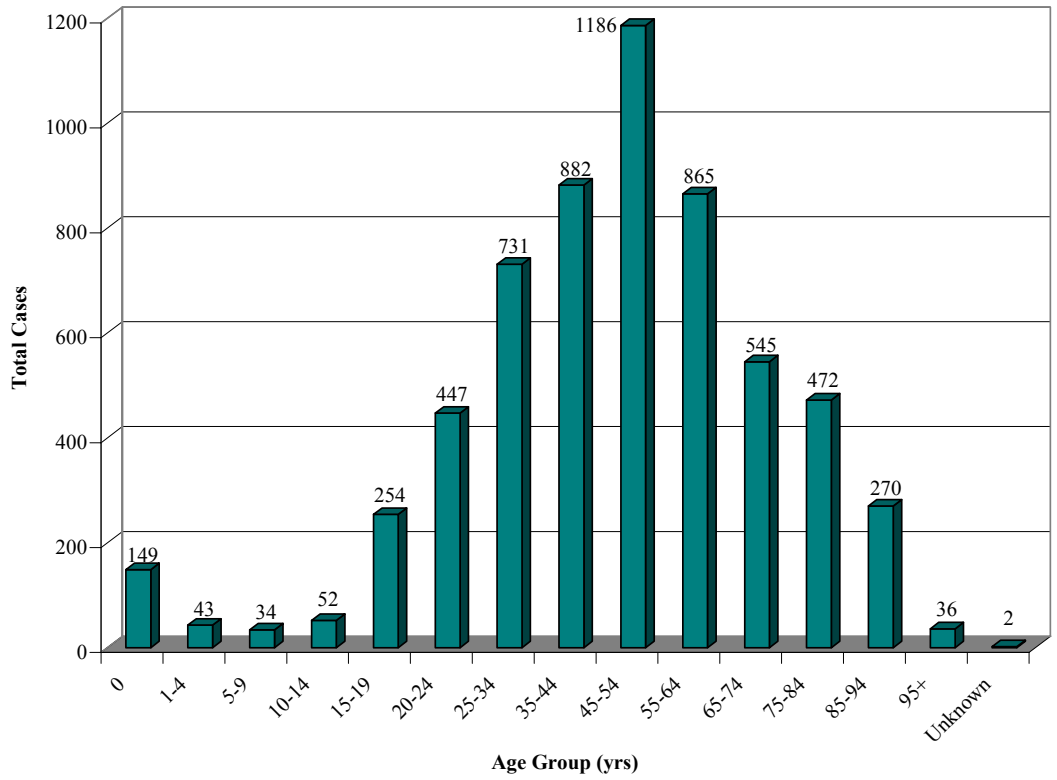


Table 5. Total Cases by Manner of Death by Autopsy Status, 2007

	Manner of Death					
Autopsy	**Accident**	**Homicide**	**Natural**	**Suicide**	**Undetermined**	**Total**
Yes	888	437	773	729	115	2942
No	1516	6	1321	177	6	3026
% Yes	36.9%	98.6%	36.9%	80.5%	95.0%	49.3%
Total	**2404**	**443**	**2094**	**906**	**121**	**5968**

Figure 5. Proportion of Cases by Manner of Death, 2007

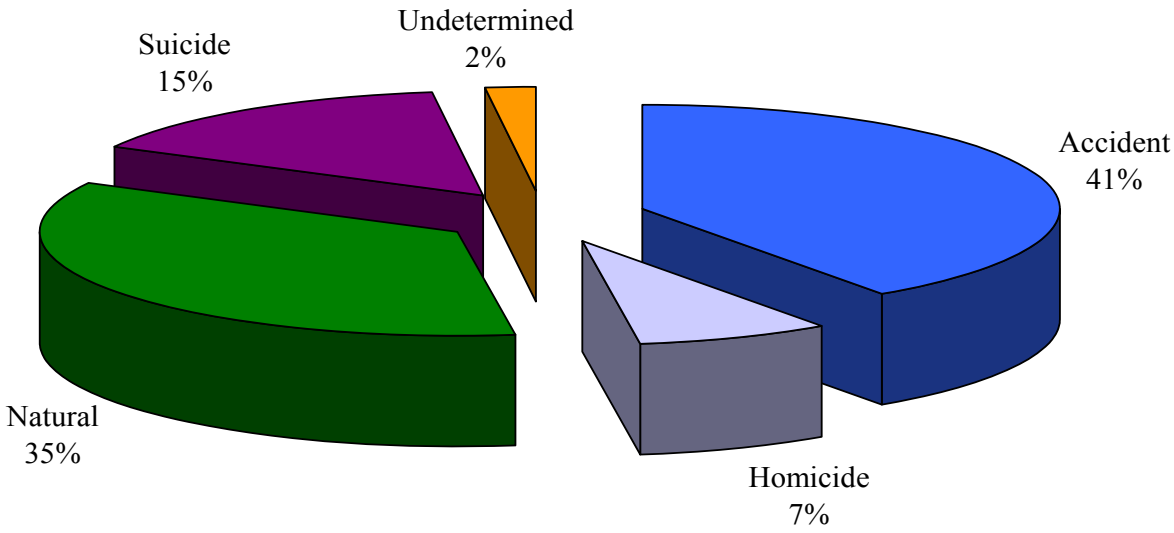


Figure 6. Total Cases by Month of Death by Manner of Death, 2007

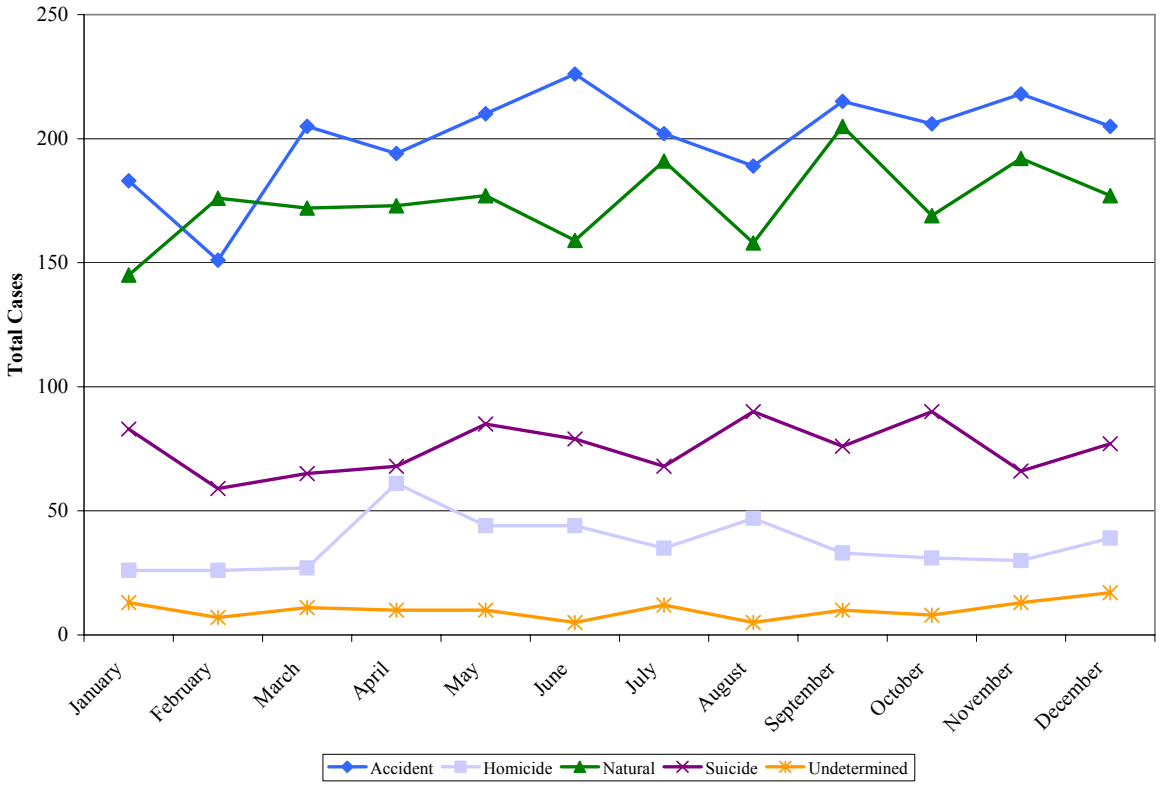


Figure 7. Total Cases by Day of Death by Manner of Death, 2007

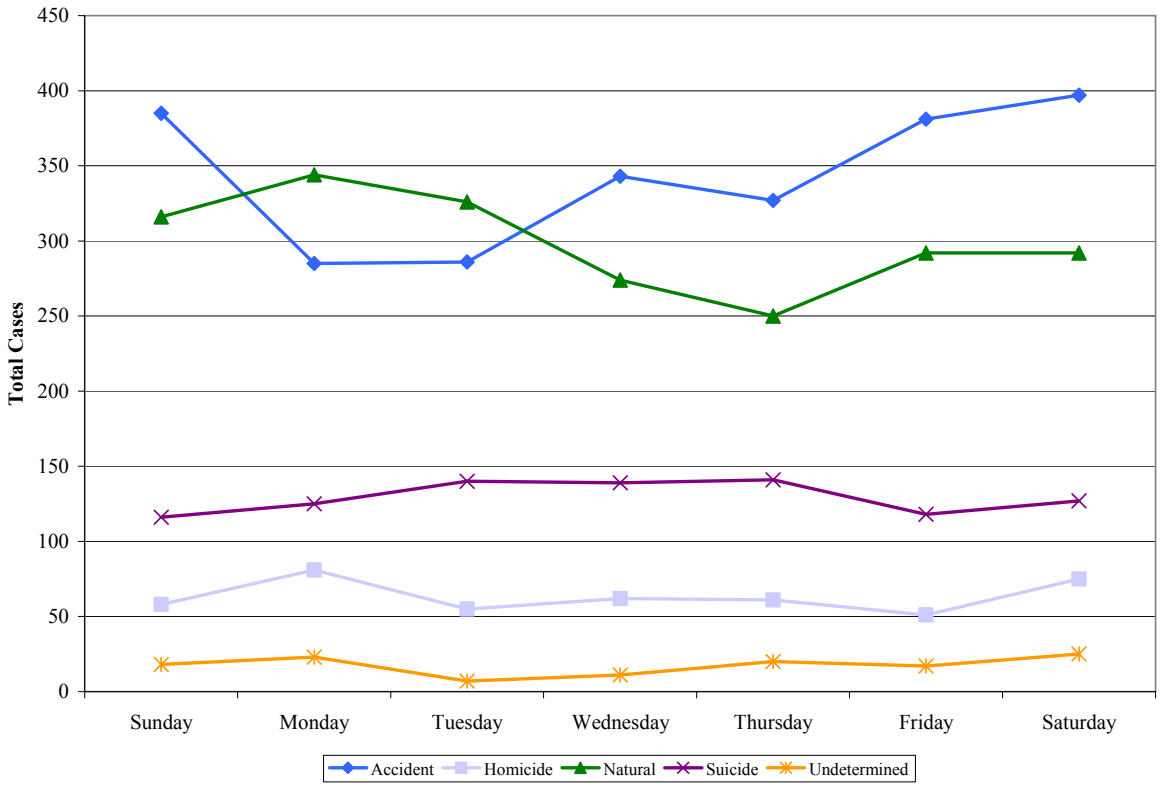


Table 6. Total Cases by Manner of Death by Gender, 2007

	Manner of Death					
Gender	**Accident**	**Homicide**	**Natural**	**Suicide**	**Undetermined**	**Total**
Male	1629 (67.8%)	351 (79.2%)	1450 (69.2%)	671 (74.1%)	77 (63.6%)	4178 (70%)
Female	775 (32.2%)	92 (20.8%)	644 (30.8%)	235 (25.9%)	43 (35.5%)	1789 (30%)
Unknown	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.8%)	1 (0.02%)
Total	**2404**	**443**	**2094**	**906**	**121**	**5968 (100%)**

Figure 8. Total Cases by Gender by Manner of Death, 2007

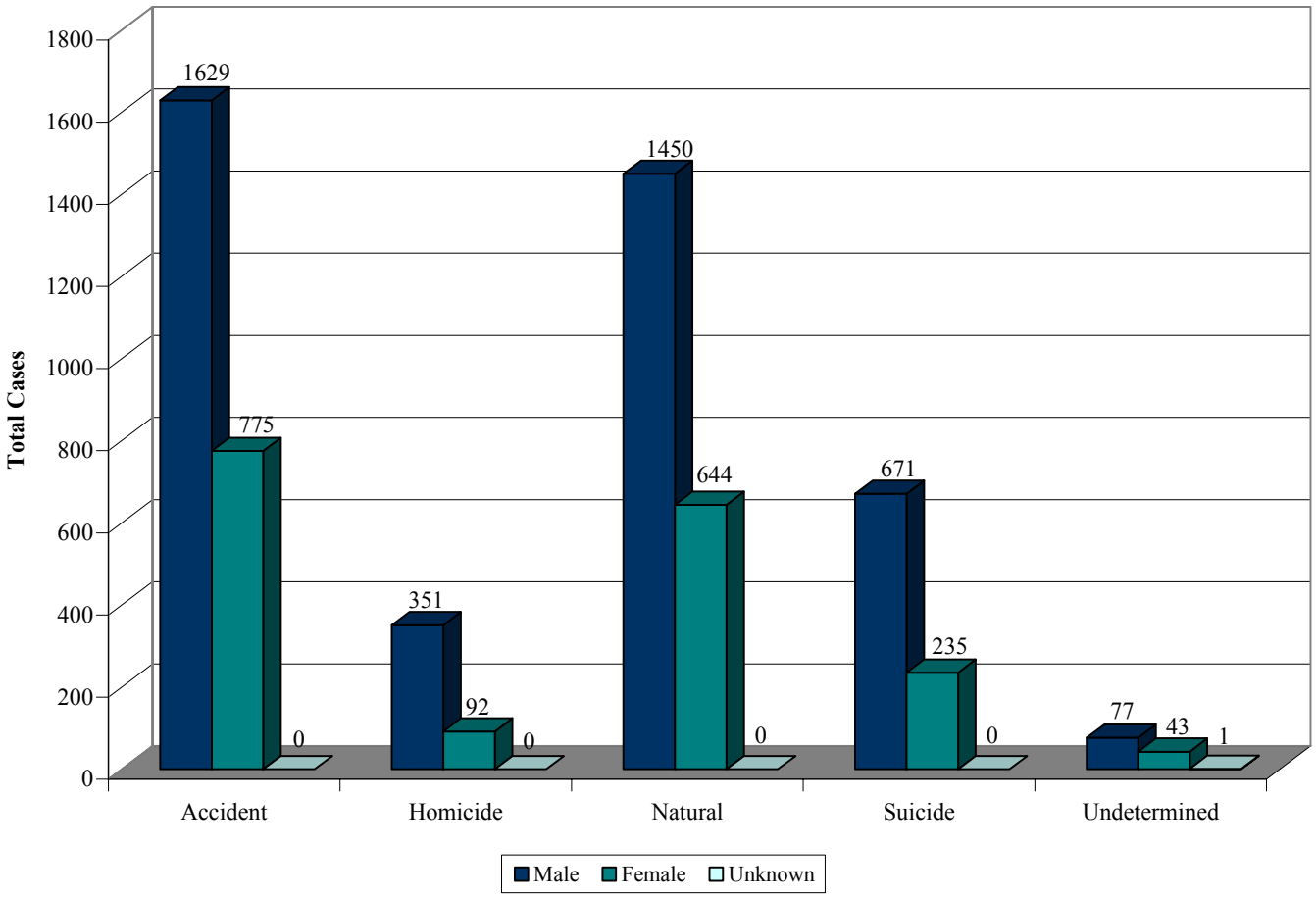


Table 7. Total Cases by Manner of Death by Gender by Age Group, 2007

		Manner of Death					
Gender	**Age Group**	**Accident**	**Homicide**	**Natural**	**Suicide**	**Undetermined**	**Total**
Female	0	7	4	18	0	19	48
	1-4	15	2	3	0	2	22
	5-9	11	1	2	0	0	14
	10-14	13	4	8	0	0	25
	15-19	48	9	7	7	2	73
	20-24	53	16	14	8	1	92
	25-34	84	14	33	38	5	174
	35-44	113	15	73	54	2	257
	45-54	133	12	138	73	6	362
	55-64	54	7	121	31	0	213
	65-74	64	4	85	15	2	170
	75-84	82	3	90	6	1	182
	85-94	78	1	45	3	3	130
	95+	20	0	7	0	0	27
	Subtotal	**775**	**92**	**644**	**235**	**43**	**1789**
Male	0	16	6	45	0	34	101
	1-4	13	2	5	0	1	21
	5-9	16	1	3	0	0	20
	10-14	15	2	6	4	0	27
	15-19	92	45	12	28	4	181
	20-24	197	74	17	62	5	355
	25-34	275	89	94	86	13	557
	35-44	246	53	181	138	7	625
	45-54	272	44	366	135	7	824
	55-64	166	25	362	97	2	652
	65-74	118	5	202	47	3	375
	75-84	113	5	114	57	1	290
	85-94	87	0	39	15	0	141
	95+	3	0	4	2	0	9
	Unknown	1	0	0	0	0	1
	Subtotal	**1629**	**351**	**1450**	**671**	**77**	**4178**
Unknown	Unknown	0	0	0	0	1	1
	Subtotal	**0**	**0**	**0**	**0**	**1**	**1**
TOTAL		**2404**	**443**	**2094**	**906**	**121**	**5968**

Figure 9. Total Cases by Race/Ethnicity by Manner of Death, 2007

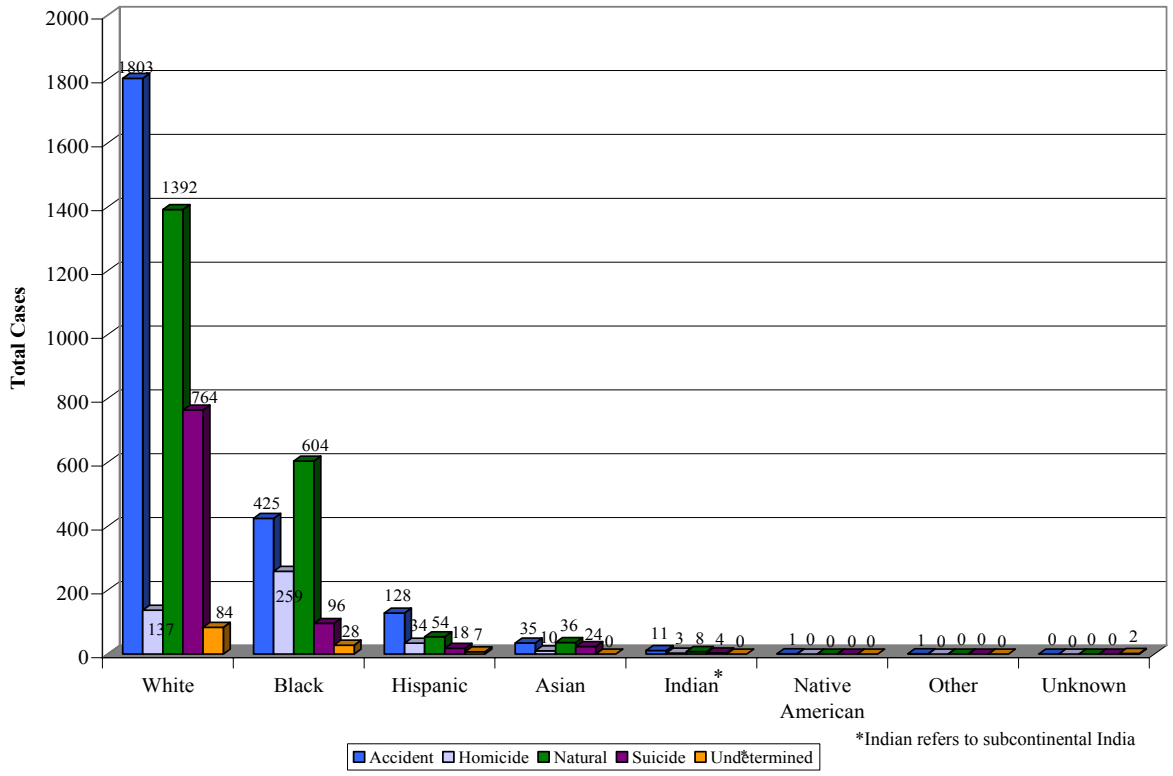


Figure 10. Total Cases by Year of Death by Manner of Death, 1999-2007

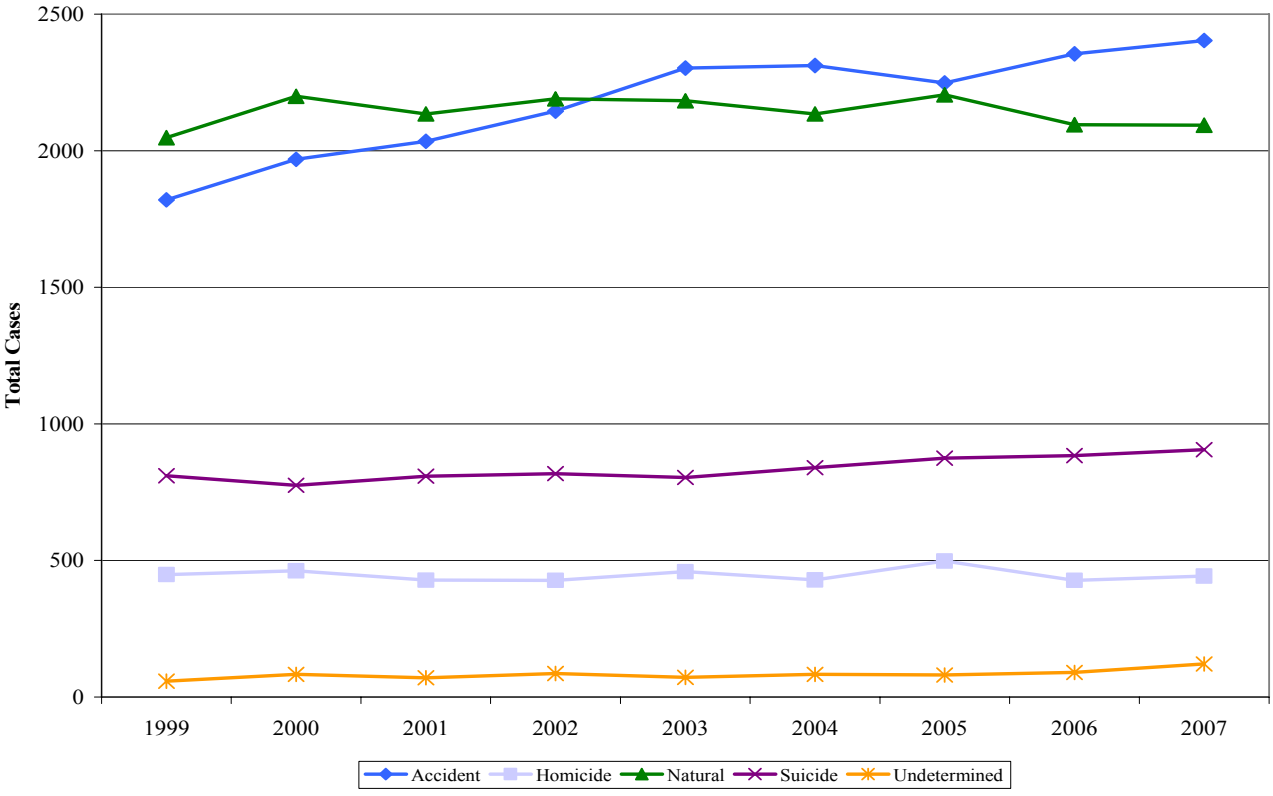


Table 8. Total Cases by Manner by City/County of Residency, 2007

	Manner of Death											
County/City of Residency	Accident Total	Accident Rate	Homicide Total	Homicide Rate	Natural Total	Natural Rate	Suicide Total	Suicide Rate	Undetermined Total	Undetermined Rate	Total	Total Rate
Accomack	20	52.0	5	13.0	12	31.2	2	5.2	0	0.0	39	101.3
Albemarle	24	25.8	0	0.0	10	10.7	9	9.7	0	0.0	43	46.2
Alexandria	21	15.0	8	5.7	27	19.3	11	7.9	2	1.4	69	49.3
Alleghany	12	73.2	3	18.3	3	18.3	2	12.2	0	0.0	20	122.0
Amelia	7	55.2	0	0.0	2	15.8	1	7.9	0	0.0	10	78.8
Amherst	8	24.8	1	3.1	23	71.4	6	18.6	1	3.1	39	121.0
Appomattox	9	63.4	2	14.1	2	14.1	1	7.0	0	0.0	14	98.6
Arlington	20	9.8	1	0.5	43	21.0	11	5.4	3	1.5	78	38.1
Augusta	31	43.7	1	1.4	9	12.7	11	15.5	0	0.0	52	73.3
Bath	2	43.1	0	0.0	2	43.1	0	0.0	0	0.0	4	86.3
Bedford City	10	159.1	0	0.0	7	111.4	2	31.8	0	0.0	19	302.3
Bedford	25	37.5	2	3.0	6	9.0	4	6.0	1	1.5	38	56.9
Bland	4	58.1	0	0.0	4	58.1	1	14.5	0	0.0	9	130.8
Botetourt	9	28.1	0	0.0	4	12.5	3	9.4	1	3.1	17	53.1
Bristol	10	56.8	0	0.0	9	51.2	3	17.1	0	0.0	22	125.0
Brunswick	4	22.5	1	5.6	8	44.9	2	11.2	0	0.0	15	84.2
Buchanan	14	58.6	0	0.0	8	33.5	6	25.1	1	4.2	29	121.3
Buckingham	12	75.3	2	12.6	1	6.3	3	18.8	1	6.3	19	119.3
Buena Vista	1	15.4	0	0.0	0	0.0	0	0.0	0	0.0	1	15.4
Campbell	17	32.2	1	1.9	13	24.6	3	5.7	1	1.9	35	66.2
Caroline	15	55.0	2	7.3	12	44.0	6	22.0	0	0.0	35	128.3
Carroll	10	34.3	4	13.7	13	44.6	6	20.6	0	0.0	33	113.3
Charles City	4	55.8	0	0.0	2	27.9	0	0.0	0	0.0	6	83.7
Charlotte	8	64.9	0	0.0	5	40.5	2	16.2	0	0.0	15	121.6
Charlottesville	19	46.1	3	7.3	18	43.7	5	12.1	0	0.0	45	109.1
Chesapeake	58	26.5	13	5.9	44	20.1	18	8.2	2	0.9	135	61.6
Chesterfield	64	21.4	11	3.7	56	18.7	27	9.0	3	1.0	161	53.7
Clarke	2	13.9	0	0.0	5	34.8	0	0.0	1	7.0	8	55.7
Clifton Forge	1	23.3	0	0.0	0	0.0	0	0.0	0	0.0	1	23.3
Colonial Heights	7	39.3	0	0.0	6	33.7	3	16.9	1	5.6	17	95.5
Covington	2	32.4	0	0.0	1	16.2	2	32.4	0	0.0	5	81.1
Craig	2	38.9	0	0.0	1	19.5	1	19.5	0	0.0	4	77.8

continued

County/City of Residency	Manner of Death											
	Accident Total	Accident Rate	Homicide Total	Homicide Rate	Natural Total	Natural Rate	Suicide Total	Suicide Rate	Undetermined Total	Undetermined Rate	Total	Total Rate
Culpeper	23	50.3	1	2.2	5	10.9	10	21.9	1	2.2	40	87.5
Cumberland	5	51.9	2	20.8	5	51.9	0	0.0	0	0.0	12	124.7
Danville	14	31.1	9	20.0	19	42.3	3	6.7	0	0.0	45	100.1
Dickenson	16	99.0	1	6.2	9	55.7	6	37.1	0	0.0	32	197.9
Dinwiddie	7	27.2	1	3.9	17	66.0	3	11.7	0	0.0	28	108.8
Emporia	4	71.2	1	17.8	3	53.4	0	0.0	0	0.0	8	142.4
Essex	4	36.8	1	9.2	3	27.6	0	0.0	2	18.4	10	92.1
Fairfax City	4	17.1	1	4.3	2	8.6	3	12.8	0	0.0	10	42.8
Fairfax	138	13.7	18	1.8	154	15.2	83	8.2	11	1.1	404	40.0
Falls Church	3	27.4	0	0.0	1	9.1	1	9.1	0	0.0	5	45.7
Fauquier	29	43.7	3	4.5	17	25.6	5	7.5	1	1.5	55	82.9
Floyd	13	88.8	0	0.0	8	54.6	2	13.7	0	0.0	23	157.1
Fluvanna	13	51.3	0	0.0	5	19.7	2	7.9	0	0.0	20	79.0
Franklin City	3	33.7	0	0.0	0	0.0	0	0.0	0	0.0	3	33.7
Franklin	16	31.3	1	2.0	15	29.3	8	15.6	1	2.0	41	80.2
Frederick	21	28.8	1	1.4	21	28.8	9	12.3	2	2.7	54	74.1
Fredericksburg	18	80.3	3	13.4	7	31.2	10	44.6	0	0.0	38	169.6
Galax	4	58.6	1	14.7	5	73.3	1	14.7	0	0.0	11	161.2
Giles	7	40.6	1	5.8	4	23.2	3	17.4	0	0.0	15	87.1
Gloucester	8	20.9	0	0.0	3	7.8	5	13.0	0	0.0	16	41.7
Goochland	13	63.1	0	0.0	10	48.5	2	9.7	0	0.0	25	121.3
Grayson	5	31.1	1	6.2	5	31.1	2	12.4	0	0.0	13	80.9
Greene	11	61.6	1	5.6	3	16.8	2	11.2	1	5.6	18	100.8
Greensville	5	42.0	0	0.0	28	235.1	0	0.0	0	0.0	33	277.0
Halifax	23	64.7	2	5.6	11	31.0	4	11.3	0	0.0	40	112.6
Hampton	28	19.1	8	5.5	40	27.3	13	8.9	1	0.7	90	61.5
Hanover	27	27.3	0	0.0	15	15.2	15	15.2	1	1.0	58	58.6
Harrisonburg	1	2.3	0	0.0	4	9.1	4	9.1	1	2.3	10	22.7
Henrico	60	20.7	9	3.1	65	22.4	23	7.9	2	0.7	159	54.9
Henry	11	19.8	3	5.4	21	37.8	10	18.0	1	1.8	46	82.8
Highland	1	40.9	0	0.0	0	0.0	0	0.0	0	0.0	1	40.9
Hopewell	12	52.1	5	21.7	1	4.3	1	4.3	1	4.3	20	86.9
Isle of Wight	13	37.1	2	5.7	7	20.0	1	2.9	0	0.0	23	65.6
James City	14	22.9	1	1.6	11	18.0	4	6.5	0	0.0	30	49.0
King and Queen	4	58.1	1	14.5	2	29.1	4	58.1	0	0.0	11	159.8

continued

County/City of Residency	Manner of Death											
	Accident Total	Accident Rate	Homicide Total	Homicide Rate	Natural Total	Natural Rate	Suicide Total	Suicide Rate	Undetermined Total	Undetermined Rate	Total	Total Rate
King George	7	30.9	0	0.0	6	26.5	2	8.8	1	4.4	16	70.7
King William	7	44.6	2	12.7	1	6.4	1	6.4	0	0.0	11	70.1
Lancaster	9	78.0	0	0.0	5	43.4	4	34.7	0	0.0	18	156.1
Lee	15	63.9	1	4.3	5	21.3	4	17.0	1	4.3	26	110.8
Loudoun	35	12.6	1	0.4	28	10.0	19	6.8	0	0.0	83	29.8
Louisa	16	50.1	4	12.5	12	37.5	7	21.9	1	3.1	40	125.2
Lunenburg	12	92.2	1	7.7	7	53.8	1	7.7	0	0.0	21	161.3
Lynchburg	24	33.7	1	1.4	21	29.5	5	7.0	1	1.4	52	72.9
Madison	12	87.5	0	0.0	4	29.2	3	21.9	1	7.3	20	145.8
Manassas	13	36.7	1	2.8	6	16.9	3	8.5	0	0.0	23	64.9
Martinsville	4	27.4	2	13.7	7	48.0	4	27.4	1	6.9	18	123.5
Mathews	3	33.2	0	0.0	5	55.3	0	0.0	0	0.0	8	88.5
Mecklenburg	17	52.9	1	3.1	9	28.0	5	15.6	0	0.0	32	99.7
Middlesex	6	56.4	1	9.4	3	28.2	1	9.4	0	0.0	11	103.4
Montgomery	26	29.2	11	12.3	30	33.6	20	22.4	1	1.1	88	98.7
Nelson	9	59.0	2	13.1	4	26.2	0	0.0	0	0.0	15	98.4
New Kent	6	35.1	0	0.0	3	17.5	3	17.5	0	0.0	12	70.1
Newport News	35	19.5	30	16.7	65	36.3	16	8.9	3	1.7	149	83.2
Norfolk	77	32.7	46	19.5	89	37.8	29	12.3	4	1.7	245	103.9
Northampton	9	67.2	2	14.9	2	14.9	2	14.9	0	0.0	15	111.9
Northumberland	5	38.8	1	7.8	4	31.0	2	15.5	0	0.0	12	93.0
Norton	0	0.0	0	0.0	0	0.0	0	0.0	1	26.9	1	26.9
Nottoway	6	38.1	1	6.3	10	63.5	0	0.0	0	0.0	17	107.9
Orange	13	40.0	2	6.2	4	12.3	4	12.3	0	0.0	23	70.8
Page	10	41.4	0	0.0	5	20.7	5	20.7	0	0.0	20	82.8
Patrick	5	26.5	1	5.3	1	5.3	4	21.2	0	0.0	11	58.3
Petersburg	23	69.9	7	21.3	32	97.3	4	12.2	0	0.0	66	200.7
Pittsylvania	26	42.7	2	3.3	15	24.7	9	14.8	1	1.6	53	87.1
Poquoson	1	8.4	0	0.0	4	33.7	1	8.4	0	0.0	6	50.6
Portsmouth	30	29.4	15	14.7	56	54.9	13	12.7	4	3.9	118	115.7
Powhatan	7	25.2	0	0.0	13	46.7	1	3.6	1	3.6	22	79.1
Prince Edward	14	65.5	1	4.7	7	32.8	2	9.4	2	9.4	26	121.7
Prince George	8	22.3	4	11.1	11	30.7	9	25.1	0	0.0	32	89.2
Prince William	56	15.5	15	4.2	50	13.9	30	8.3	9	2.5	160	44.4
Pulaski	21	59.9	0	0.0	10	28.5	11	31.4	2	5.7	44	125.5

continued

County/City of Residency	Manner of Death											
	Accident Total	Accident Rate	Homicide Total	Homicide Rate	Natural Total	Natural Rate	Suicide Total	Suicide Rate	Undetermined Total	Undetermined Rate	Total	Total Rate
Radford	5	31.0	0	0.0	5	31.0	0	0.0	0	0.0	10	62.0
Rappahannock	1	13.9	1	13.9	3	41.7	4	55.6	0	0.0	9	125.0
Richmond City	128	64.0	65	32.5	110	55.0	26	13.0	7	3.5	336	167.9
Richmond	2	21.8	1	10.9	1	10.9	2	21.8	0	0.0	6	65.4
Roanoke City	25	27.0	9	9.7	39	42.1	19	20.5	3	3.2	95	102.6
Roanoke	22	24.3	3	3.3	19	21.0	6	6.6	0	0.0	50	55.3
Rockbridge	8	37.2	1	4.7	7	32.6	5	23.3	1	4.7	22	102.3
Rockingham	28	38.1	1	1.4	21	28.6	10	13.6	0	0.0	60	81.6
Russell	16	55.5	0	0.0	4	13.9	4	13.9	1	3.5	25	86.7
Salem	13	51.5	0	0.0	3	11.9	5	19.8	0	0.0	21	83.2
Scott	8	35.1	2	8.8	6	26.3	10	43.9	0	0.0	26	114.1
Shenandoah	9	22.3	0	0.0	14	34.7	3	7.4	0	0.0	26	64.4
Smyth	10	31.2	0	0.0	8	25.0	7	21.8	1	3.1	26	81.1
South Boston	0	0.0	0	0.0	2	23.6	0	0.0	0	0.0	2	23.6
Southampton	11	62.3	3	17.0	14	79.3	1	5.7	0	0.0	29	164.3
Spotsylvania	31	26.0	4	3.4	16	13.4	14	11.7	3	2.5	68	57.0
Stafford	40	33.1	6	5.0	22	18.2	11	9.1	1	0.8	80	66.3
Staunton	7	29.4	0	0.0	5	21.0	8	33.6	0	0.0	20	83.9
Suffolk	28	34.4	8	9.8	31	38.1	2	2.5	0	0.0	69	84.8
Surry	8	112.9	0	0.0	0	0.0	1	14.1	0	0.0	9	127.0
Sussex	4	32.7	0	0.0	8	65.5	1	8.2	0	0.0	13	106.4
Tazewell	11	25.1	3	6.8	15	34.2	4	9.1	1	2.3	34	77.5
Virginia Beach	96	22.1	16	3.7	72	16.6	51	11.7	8	1.8	243	55.9
Warren	7	19.3	1	2.8	15	41.3	11	30.3	1	2.8	35	96.4
Washington	18	34.1	1	1.9	15	28.4	15	28.4	1	1.9	50	94.8
Waynesboro	3	13.9	1	4.6	6	27.7	3	13.9	0	0.0	13	60.0
Westmoreland	11	63.8	0	0.0	9	52.2	2	11.6	1	5.8	23	133.3
Williamsburg	4	32.2	0	0.0	13	104.6	2	16.1	0	0.0	19	152.8
Winchester	6	23.3	2	7.8	10	38.9	0	0.0	1	3.9	19	73.8
Wise	29	69.6	2	4.8	18	43.2	11	26.4	2	4.8	62	148.8
Wythe	14	49.1	0	0.0	4	14.0	5	17.5	0	0.0	23	80.6
York	10	16.3	1	1.6	12	19.6	10	16.3	0	0.0	33	53.9
TOTAL FOR STATE RESIDENTS	**2210**	**28.7**	**424**	**5.5**	**1943**	**25.2**	**867**	**11.2**	**110**	**1.4**	**5554**	**72.0**
Out of Country	6	ND‡	1	ND	9	ND	0	ND	0	ND	16	ND

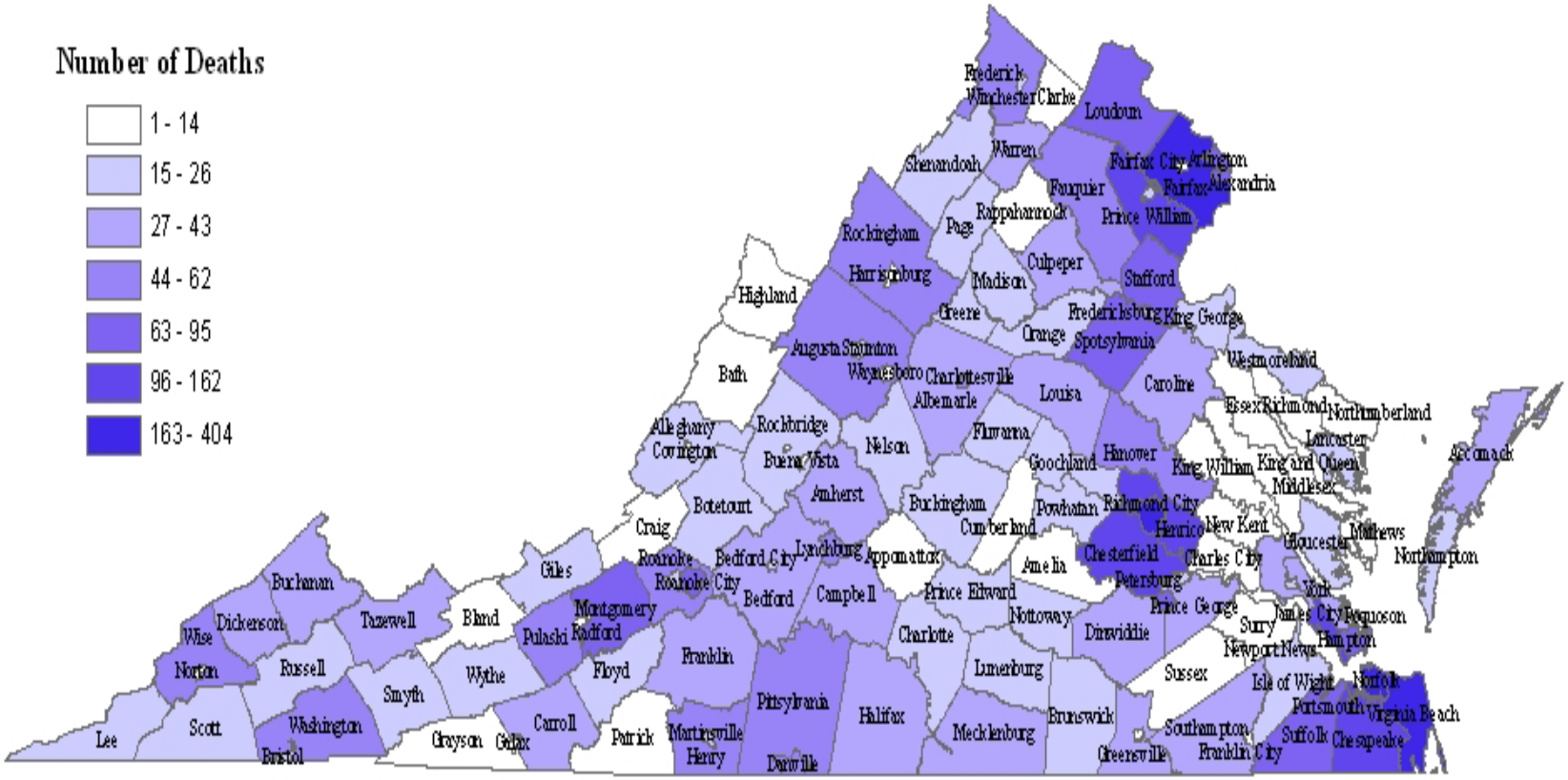
continued

	Manner of Death											
County/City of Residency	**Accident Total**	**Accident Rate**	**Homicide Total**	**Homicide Rate**	**Natural Total**	**Natural Rate**	**Suicide Total**	**Suicide Rate**	**Undetermined Total**	**Undetermined Rate**	**Total**	**Total Rate**
Out of State	188	ND	18	ND	141	ND	39	ND	9	ND	395	ND
Unknown	0	ND	0	ND	1	ND	0	ND	2	ND	3	ND
TOTAL	**2404**	**ND**	**443**	**ND**	**2094**	**ND**	**906**	**ND**	**121**	**ND**	**5968**	**ND**

† Population based on 2000 US Census Bureau

‡ No Denominator

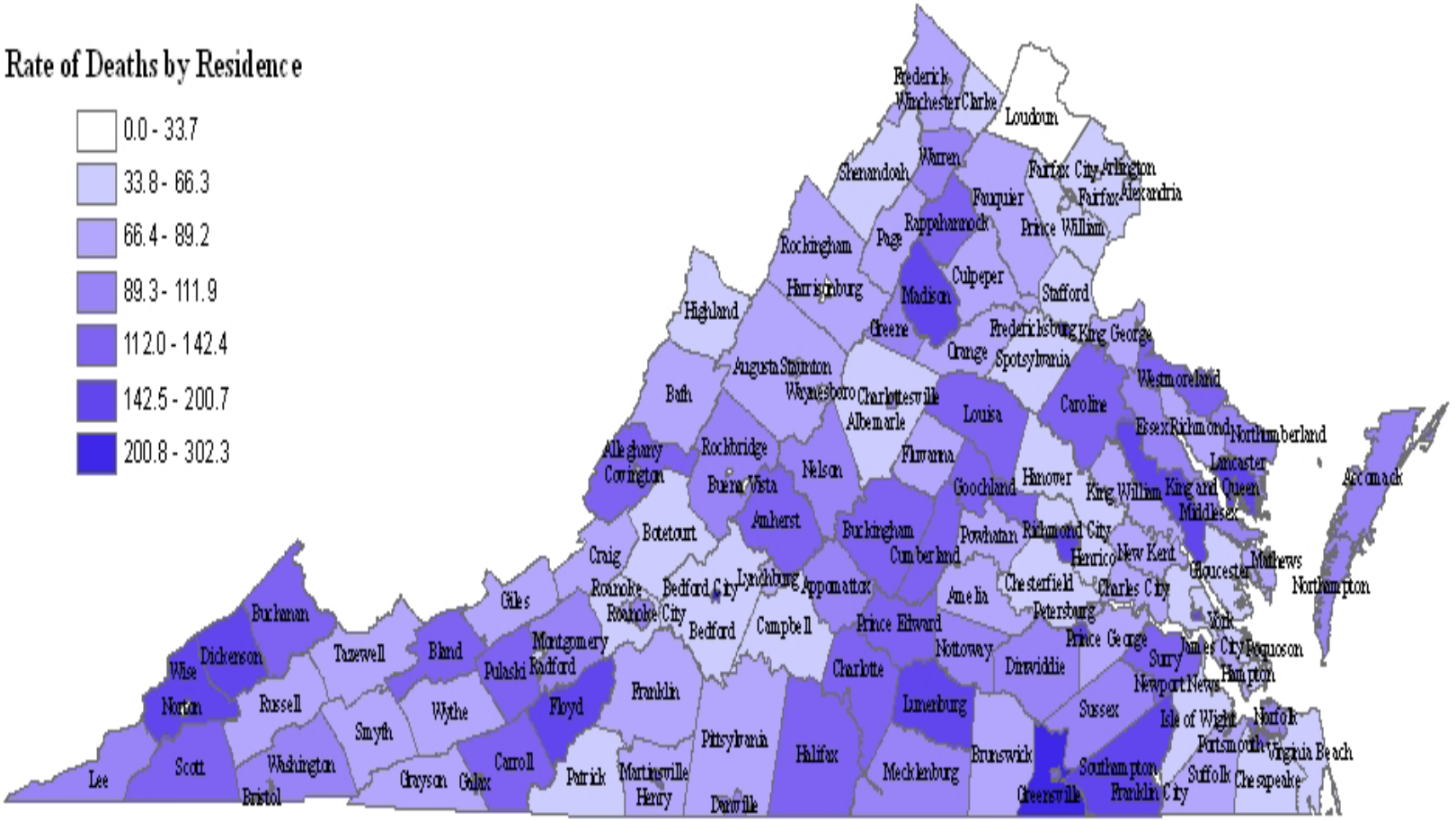
Figure 11. Total Cases by City/County of Residence, 2007



City/County of residence but not necessarily where injury and/or death occurred.

414 cases of a total 5,968 cases were from out-of-state residents or where residency was unknown.

Figure 12. Rate of Cases by City/County of Residence, 2007



Rate is per 100,000.
City/County of residence but not necessarily where injury and/or death occurred.
414 cases of a total 5,968 cases were from out-of-state residents or where residency was unknown.

Table 9. Total Cases by City/County of Death, 2007

County/City of Death	Manner of Death					
	Accident Total	Homicide Total	Natural Total	Suicide Total	Undetermined Total	Total
Accomack	16	4	10	2	0	32
Albemarle	15	0	11	5	0	31
Alexandria	19	7	52	11	3	92
Alleghany	11	3	5	1	0	20
Amelia	7	0	2	1	0	10
Amherst	6	1	17	4	1	29
Appomattox	3	2	1	0	0	6
Arlington	20	3	52	12	4	91
Augusta	28	1	12	12	0	53
Bath	2	0	2	0	0	4
Bedford City	5	0	6	1	1	13
Bedford	17	2	4	5	0	28
Bland	3	0	2	1	0	6
Botetourt	7	0	4	4	1	16
Bristol	8	0	6	4	0	18
Brunswick	5	1	6	2	0	14
Buchanan	16	0	9	5	1	31
Buckingham	10	1	1	2	1	15
Campbell	8	2	9	3	0	22
Caroline	8	4	12	6	0	30
Carroll	12	4	12	8	0	36
Charles City	6	0	0	0	0	6
Charlotte	7	0	3	2	0	12
Charlottesville	84	6	24	17	2	133
Chesapeake	47	7	39	16	1	110
Chesterfield	47	6	52	25	3	133
Clarke	4	0	1	1	0	6
Clifton Forge	0	0	1	0	0	1
Colonial Heights	1	0	2	2	0	5
Covington	0	0	0	1	0	1
Craig	2	0	0	1	0	3
Culpeper	21	1	9	8	1	40
Cumberland	1	1	2	1	0	5
Danville	23	6	29	3	0	61
Dickenson	15	1	7	5	0	28
Dinwiddie	7	1	11	3	0	22
Emporia	8	2	11	0	0	21
Essex	6	0	8	2	2	18
Fairfax City	3	0	2	1	0	6
Fairfax	215	20	176	93	12	516
Falls Church	1	0	0	1	0	2
Fauquier	28	4	17	4	1	54
Floyd	5	0	5	2	0	12
Fluvanna	5	0	5	3	0	13
Franklin City	0	0	1	0	0	1
Franklin	16	1	13	8	0	38
Frederick	22	0	17	8	1	48

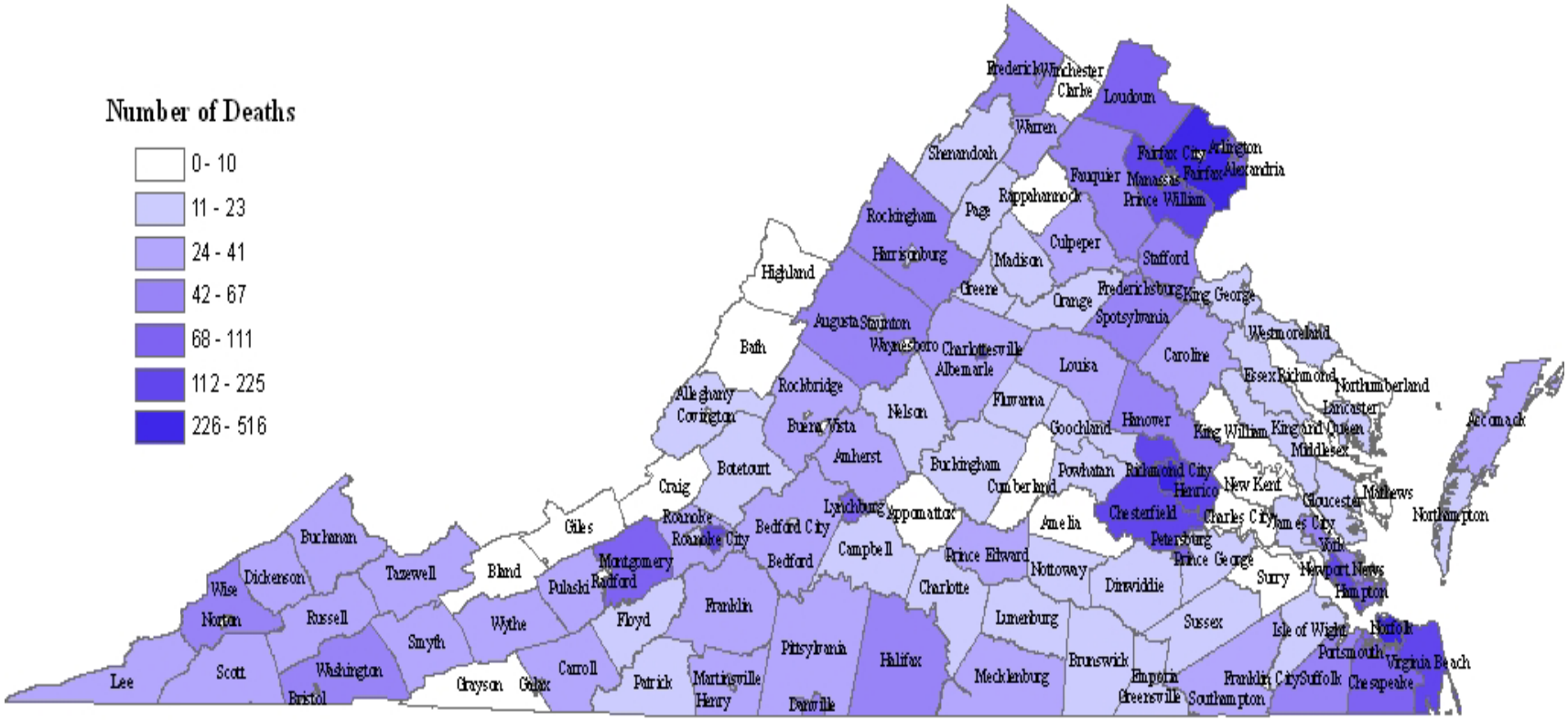
continued

County/City of Death	Manner of Death					
	Accident Total	Homicide Total	Natural Total	Suicide Total	Undetermined Total	Total
Fredericksburg	28	2	24	6	3	63
Galax	4	2	12	1	0	19
Giles	3	0	4	3	0	10
Gloucester	8	1	3	6	0	18
Goochland	10	0	7	4	0	21
Grayson	3	0	2	2	0	7
Greene	10	1	3	2	0	16
Greensville	1	0	15	0	0	16
Halifax	22	3	13	4	0	42
Hampton	16	6	46	16	1	85
Hanover	24	0	22	14	0	60
Harrisonburg	3	0	10	3	1	17
Henrico	61	6	64	23	2	156
Henry	10	3	15	9	1	38
Highland	2	0	0	0	0	2
Hopewell	10	3	7	1	1	22
Isle of Wight	6	0	5	1	0	12
James City	5	0	12	2	0	19
King and Queen	6	0	2	4	0	12
King George	5	0	5	1	1	12
King William	4	1	2	1	0	8
Lancaster	9	0	5	2	0	16
Lee	15	1	5	4	1	26
Lexington	2	0	2	1	0	5
Loudoun	27	1	29	22	0	79
Louisa	14	4	14	8	0	40
Lunenburg	10	1	5	1	0	17
Lynchburg	48	1	31	7	1	88
Madison	7	0	4	4	4	19
Manassas	8	2	8	5	0	23
Martinsville	5	2	13	6	1	27
Mathews	2	0	4	0	0	6
Mecklenburg	13	1	10	5	0	29
Middlesex	5	0	3	1	0	9
Montgomery	23	31	20	22	2	98
Nelson	7	1	4	0	0	12
New Kent	2	0	5	3	0	10
Newport News	53	31	71	19	3	177
Norfolk	154	73	111	40	6	384
Northampton	7	3	7	4	0	21
Northumberland	2	1	3	3	0	9
Norton	2	0	4	1	1	8
Nottoway	4	1	12	0	0	17
Orange	12	0	2	4	0	18
Page	9	0	3	5	0	17
Patrick	7	1	1	4	0	13
Petersburg	21	8	48	2	1	80
Pittsylvania	18	4	9	9	1	41
Poquoson	1	0	1	1	0	3

continued

County/City of Death	Manner of Death					
	Accident Total	Homicide Total	Natural Total	Suicide Total	Undetermined Total	Total
Portsmouth	22	10	62	13	4	111
Powhatan	4	0	17	2	0	23
Prince Edward	13	1	14	2	2	32
Prince George	10	0	5	6	0	21
Prince William	45	11	49	27	8	140
Pulaski	19	0	13	8	1	41
Radford	1	0	5	0	1	7
Rappahannock	2	0	2	4	0	8
Richmond City	239	78	142	34	9	502
Richmond	2	0	2	1	0	5
Roanoke City	91	12	48	23	5	179
Roanoke	17	2	13	7	0	39
Rockbridge	12	1	9	3	1	26
Rockingham	16	1	20	9	0	46
Russell	19	0	5	5	1	30
Salem	6	1	8	8	0	23
Scott	8	2	5	12	0	27
Shenandoah	1	0	12	5	0	18
Smyth	10	0	9	10	1	30
South Boston	0	0	2	0	0	2
Southampton	14	3	15	1	0	33
Spotsylvania	22	4	13	15	1	55
Stafford	26	2	12	11	0	51
Staunton	3	0	5	7	0	15
Suffolk	31	2	32	1	1	67
Surry	6	0	1	1	0	8
Sussex	10	0	3	2	0	15
Tazewell	13	3	15	4	2	37
Virginia Beach	92	16	59	49	9	225
Warren	6	0	14	12	1	33
Washington	21	0	14	9	1	45
Waynesboro	1	1	4	2	0	8
Westmoreland	7	1	6	2	1	17
Williamsburg	3	0	9	1	0	13
Winchester	21	2	24	2	3	52
Wise	27	2	16	12	2	59
Wythe	16	0	4	4	1	25
York	17	1	24	7	0	49
TOTAL FOR STATE	**2401**	**442**	**2089**	**903**	**121**	**5956**
Out of State	3	1	5	3	0	12
TOTAL	**2404**	**443**	**2094**	**906**	**121**	**5968**

Figure 13. Total Cases by City/County of Death, 2007



City/County of death but not necessarily residency and/or death location
12 deaths occurred outside of Virginia borders, ex. Death at sea

Table 10. Total Cases by Cause of Death, 2007

Natural Deaths	Total Cases	Autopsied
Pulmonary Diseases/Disorders	**205**	**96**
Asthma	19	13
COPD	37	10
Emboli	43	33
Pneumonia	72	27
Pulmonary Malignancy	29	11
Other Pulmonary Disease/Disorder	5	2
Central Nervous System Diseases/Disorders	**98**	**55**
Seizure Disorder	32	21
Vascular Disease	47	25
Degenerative Disease	12	3
Meningitis (Bacterial or Viral)	2	2
CNS Malignancy	3	2
Other CNS Disease/Disorder	2	2
Cardiovascular Diseases/Disorders	**1358**	**412**
Atherosclerosis	804	153
Hypertension	186	90
Atherosclerosis & Hypertension	121	92
Congenital Defect	3	3
Vascular Dissection/Ruptures	10	6
Valvular	10	7
Acute Coronary Insufficiency	154	11
Other Cardiac Disease/Disorder	70	50
Gastrointestinal Diseases/Disorders	**206**	**82**
GI Hemorrhage	27	5
Cirrhosis	12	7
Chronic Ethanolism	123	50
Hepatitis	3	0
GI Malignancy	21	9
Other GI Disease/Disorder	20	11
Genitourinal Diseases/Disorders	**23**	**10**
Renal Disease	10	5
Genitourinal Malignancy	8	2
Other GU Disease/Disorder	5	3
Perinatal And Pediatric Diseases/Disorders	**51**	**50**
Maternal Complications	1	1
Fetal Complications	9	9
Sudden Infant Death Syndrome	41	40

continued

Systemic Diseases/Disorders	**112**	**47**
Blood Disorders	8	1
Diabetes	36	10
AIDS/HIV	19	8
Sepsis	16	8
Other Infectious Disease	14	10
Metastatic Malignancy Unknown Primary	7	3
Other Systemic Disease/Disorder	12	7
Other Natural Diseases/Disorders	**41**	**20**
Other Malignancy	13	5
Other Natural Disease/Disorder	28	15
Natural Subtotal	**2094**	**772**
Unnatural Deaths	**Total Cases**	**Autopsied**
Asphyxia	**360**	**182**
Choking (Aspiration: Food or Foreign Object)	22	9
Drowning	90	60
Hanging	172	67
Mechanical	35	18
Positional	6	5
Strangulation/Neck Compression	8	8
Suffocation/Smothering	20	13
Oxygen Replacement/Displacement	6	1
Other Asphyxia	1	1
Electrocution	**11**	**9**
High Voltage	5	4
Low Voltage	6	5
Exposure	**25**	**16**
Hyperthermia	6	4
Hypothermia	19	12
Fire Injuries	**124**	**84**
Thermal Burns	22	9
Inhalation of Combustion Products	51	34
Thermal Burns & Inhalation of Combustions Products	51	41
Gunshot Wound	**837**	**817**
Handgun	677	662
Rifle	54	53
Shotgun	84	80
Unknown Gun	22	22
Blunt Force Injuries	**1605**	**308**
Head/Neck	766	123
Chest	125	25

continued

Abdomen	27	5
Trunk	80	37
Extremities	111	8
Multiple	496	110
Penetrating Injuries	**72**	**64**
Incised	17	12
Stab	51	49
Other Penetrating Injuries	4	3
Substance Abuse	**754**	**609**
Ethanol Poisoning	20	13
Prescription Drug Poisoning	388	329
Illegal (Street) Drug Poisoning	153	122
CO Poisoning (Excludes Fires)	33	11
Mixed Category Drug Poisoning	114	100
Inhalant Poisoning	7	6
OTC Poisoning	17	15
Ethylene Glycol Poisoning	5	5
Not Otherwise Specified Poisoning	13	6
Other Poisons (Heavy Metals, etc.)	4	2
Other Unnatural Deaths	**14**	**11**
Other Unnatural	14	11
Unnatural Subtotal	**3802**	**2100**
Undetermined Deaths	**Total Cases**	**Autopsied**
Undetermined After Autopsy and/or Investigation	**72**	**70**
Sudden and Unexpected Infant Death (SUID)	43	43
Skeletal/Mummified Remains	3	3
Other Undetermined	26	24
Undetermined Subtotal	**72**	**70**
TOTAL	**5968**	**2943**

SECTION 3: MANNER OF DEATH

NATURAL DEATH (N=2097)

Natural deaths enter the medical examiner system as deaths that are sudden, unexpected or suspicious, which upon examination and investigation are established as natural or as unattended by a physician for a disease process that could reasonably be expected to account for death.

- Natural deaths accounted for 35.1 percent of the deaths investigated by the OCME in 2007; the number investigated has increased 2.2 percent since 1999, although the total numbers have been decreasing since 2000.
- For children 17 years and younger, the highest number of deaths occurred for those under the age of 1 year.

Figure 14. Natural Deaths by Gender by Age Group, 2007

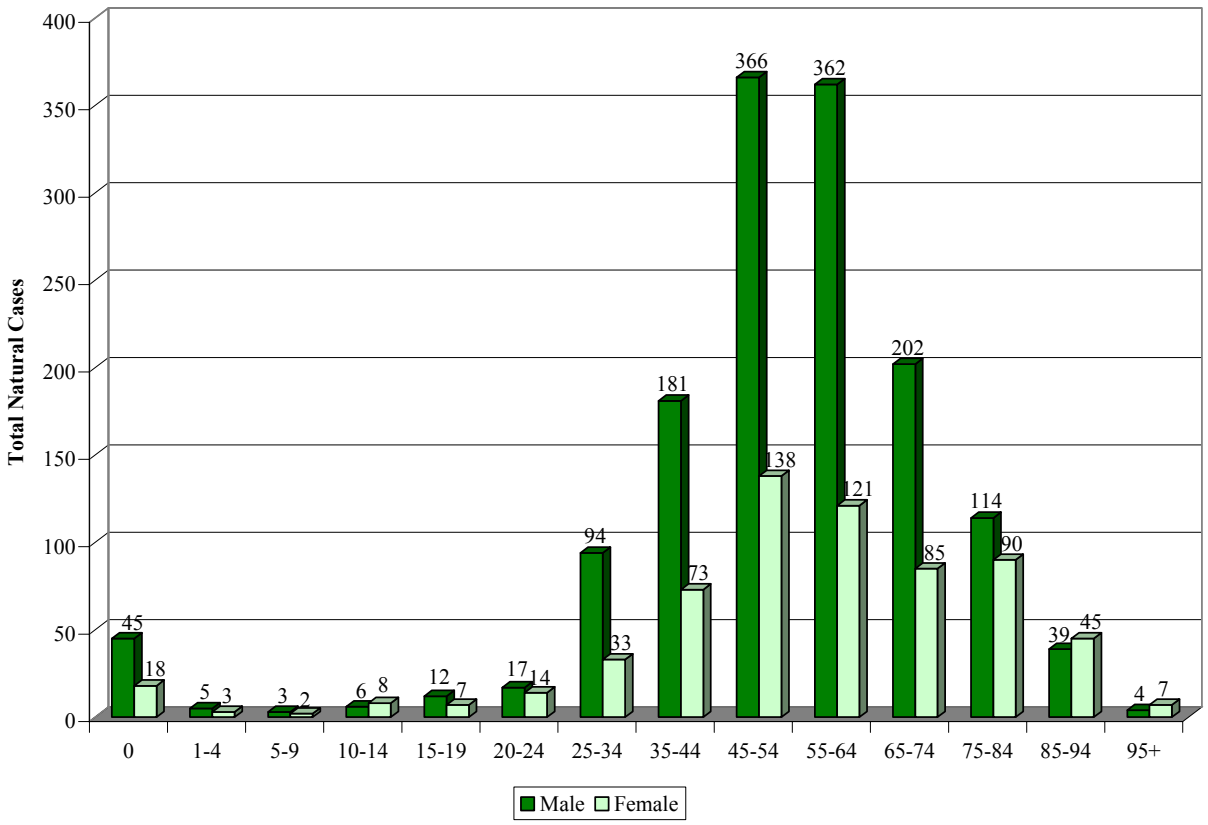
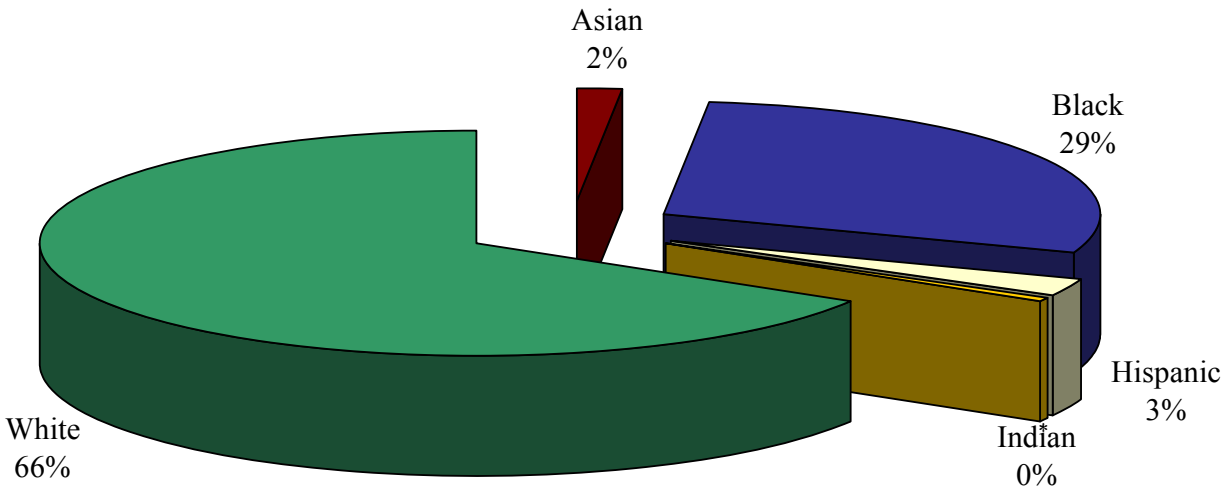
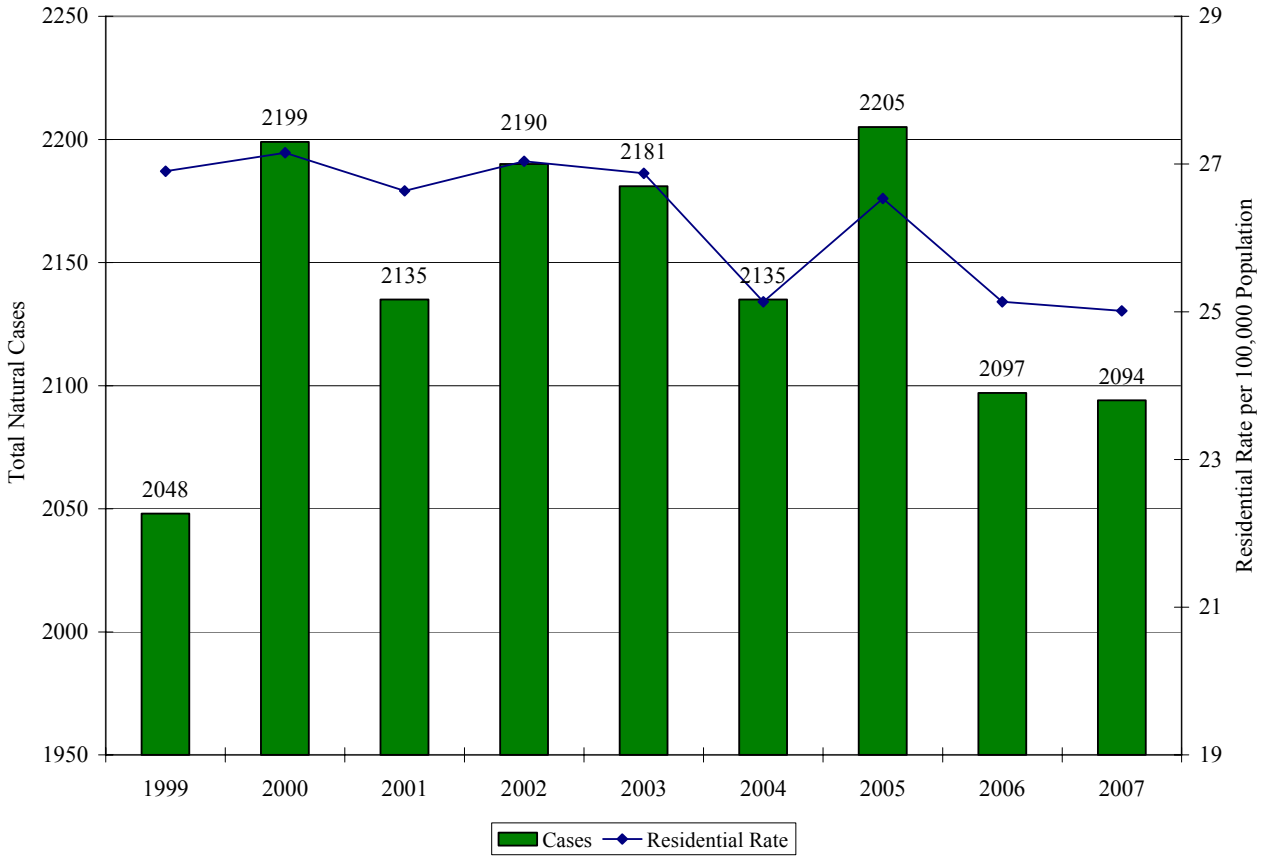


Figure 15. Natural Deaths by Race/Ethnicity, 2006



*Indian refers to subcontinental India

Figure 16. Natural Deaths & Rate by Year of Death, 1999-2007



ACCIDENTAL DEATHS (N=2404)

Accidental deaths accounted for 40.3 percent of the deaths investigated by OCME in 2007; this represents the greatest proportion of deaths by manner. The number of accidental deaths investigated annually by the OCME has increased 32.1 percent since 1999. Not only has the total number of accidental deaths increased so has the residential rate in 1999 it was 23.6 per 100,000, and it has increased to 28.4 per 100,000 in 2007. Accidents involving a motor vehicle were the most common cause of accidental deaths with 46.1 percent; this was more than double the next leading cause, drug use, with 22.7 percent of all accidental deaths.

Figure 17. Accidental Deaths by Gender by Age Group, 2007

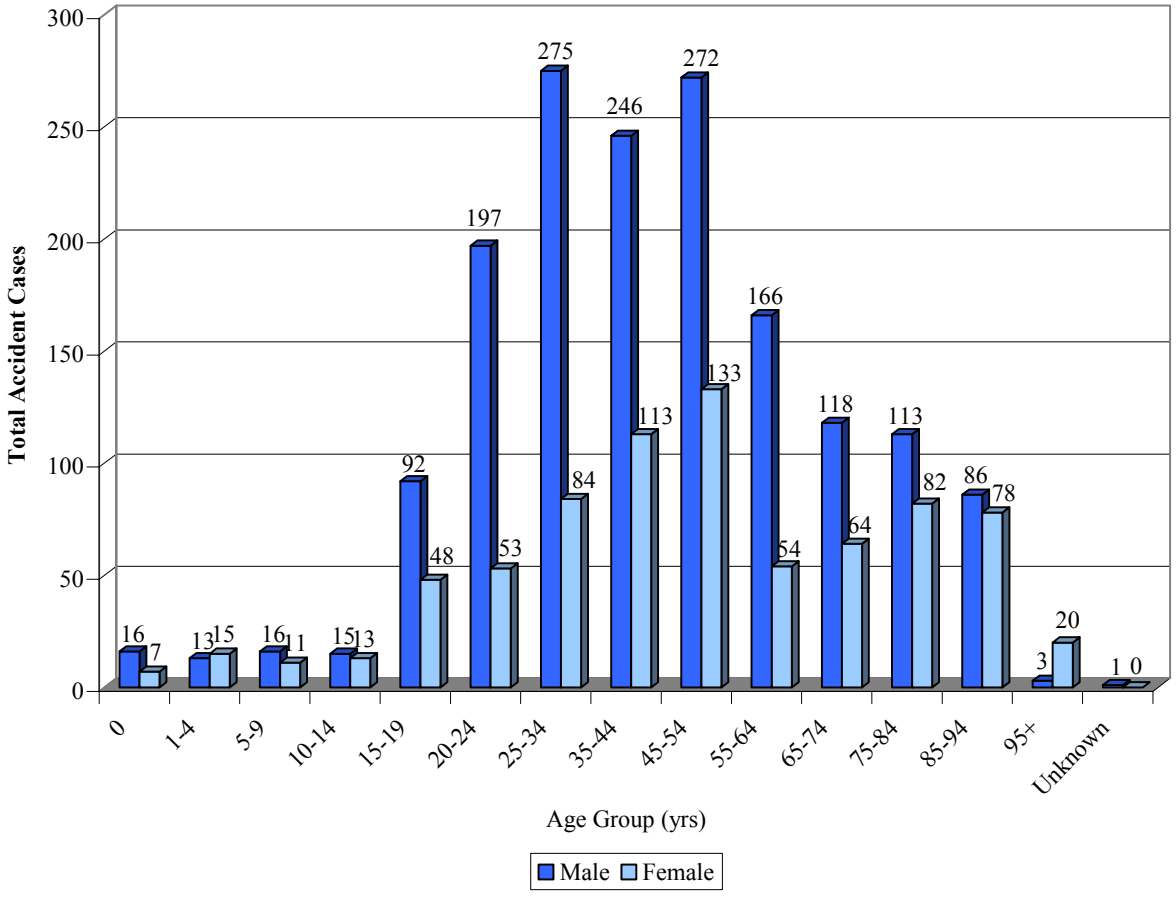
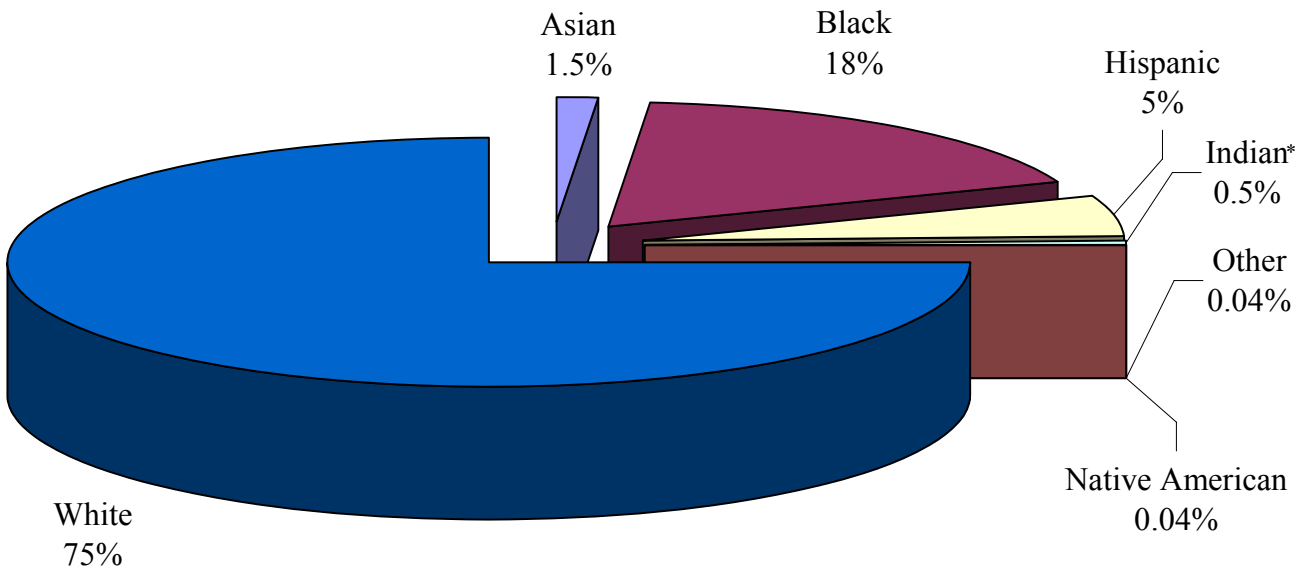


Figure 18. Proportion of Accidental Deaths by Race/Ethnicity, 2007



*Indian refers to subcontinental India

Figure 19. Accidental Deaths & Rate by Year of Death, 1999-2007

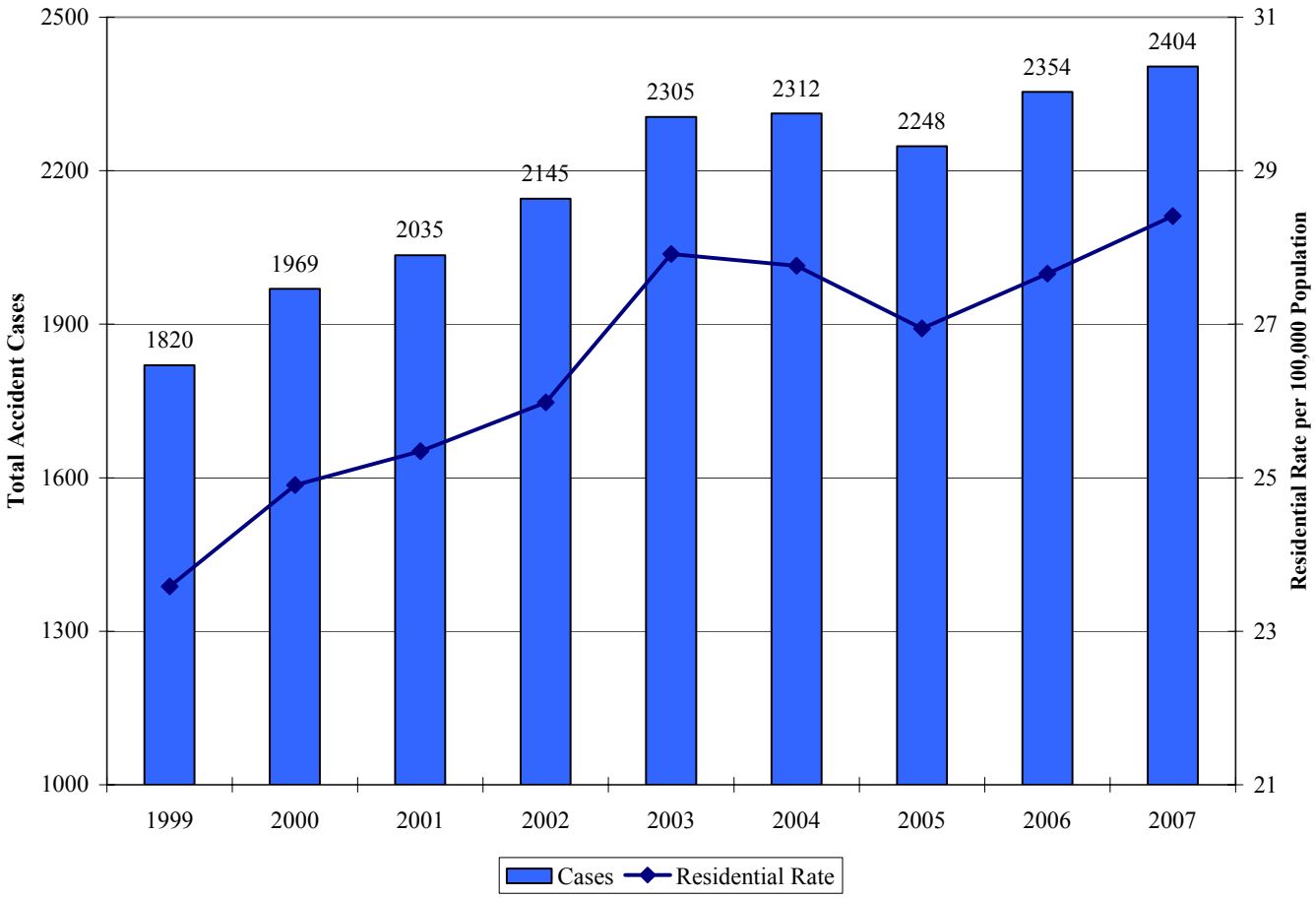


Table 11. Accidental Deaths by Method of Death, 2007

Method of Death	Total Cases	Autopsied
Animal Related		
Animal related (bitten, stung, kicked)	1	1
Asphyxia		
Choked on food/foreign object	19	7
Drowned	75	49
Hanging	3	2
Mechanical/Positional	30	20
Strangled	4	2
Suffocation/Smothering	17	11
Drug Use		
Ingested ethanol or other alcohol	20	13
Ingested and/or injected illicit, prescription, and/or OTC medications	522	432
Electrical		
Contacted electrical current	10	9
Exposure		
Exposed to cold	18	11
Exposed to heat	7	4
Fall		
Fall from all heights	396	51
Fire		
Smoke inhalation	42	24
Victim of explosion	5	2
Victim of fire/burns	52	32
Machinery		
Farm or industrial machinery accident	8	2
Motor Vehicle		
Aircraft	7	7
All Terrain Vehicle	19	5
Bicycle	8	4
Boat	3	0
Bus	5	1
Car	561	73
Lawnmower	1	0
Moped	8	0
Motorcycle	137	16
Multiple	2	0
Pickup Truck	124	27
Sport Utility Vehicle	132	25
Tractor Trailer	18	8
Train	2	2

continued

Method of Death	Total Cases	Autopsied
Truck Other	21	4
Unknown	22	5
Van	33	5
Poisoned		
Inhaled toxic agent (Carbon Monoxide)	5	2
Other (Eg. Ethylene Glycol)	4	3
Traumatic Injury		
Accidental discharge of firearm	7	7
Handgun	(3)	(3)
Rifle	(2)	(2)
Shotgun	(2)	(2)
Accidental cut injury	3	1
Falling object	23	9
Jump	5	1
Lightning	1	0
Received blow/collided with object	11	3
Other traumatic causes	11	6
Unknown		
Accidental - Unknown	2	2
TOTAL	**2404**	**888**

Table 12. Accidental Deaths by City/County of Injury by Year of Death, 2005-2007

	Year of Death			
County/City of Injury	**2005**	**2006**	**2007**	**Total**
Accomack	24	22	20	66
Albemarle	26	17	20	63
Alexandria	14	21	21	56
Alleghany	7	10	14	31
Amelia	9	4	7	20
Amherst	7	11	8	26
Appomattox	7	2	6	15
Arlington	16	18	20	54
Augusta	41	26	35	102
Bath	0	2	3	5
Bedford City	5	3	5	13
Bedford	28	22	27	77
Bland	2	0	6	8
Botetourt	7	12	12	31

continued

County/City of Injury	Year of Death			Total
	2005	2006	2007	
Bristol	5	6	10	21
Brunswick	13	16	7	36
Buchanan	24	21	18	63
Buckingham	6	3	9	18
Buena Vista	4	0	0	4
Campbell	23	32	16	71
Caroline	15	9	14	38
Carroll	10	17	15	42
Charles City	1	4	8	13
Charlotte	10	4	6	20
Charlottesville	24	21	28	73
Chesapeake	44	55	60	159
Chesterfield	55	56	71	182
Clarke	9	5	6	20
Colonial Heights	4	6	3	13
Covington	0	4	0	4
Craig	3	7	2	12
Culpeper	7	16	24	47
Cumberland	9	1	2	12
Danville	17	16	13	46
Dickenson	8	11	16	35
Dinwiddie	11	12	14	37
Emporia	4	2	8	14
Essex	5	4	7	16
Fairfax City	2	3	4	9
Fairfax	206	221	157	584
Falls Church	2	2	1	5
Fauquier	23	21	32	76
Floyd	4	13	10	27
Fluvanna	10	9	7	26
Franklin City	0	2	2	4
Franklin	29	27	22	78
Frederick	19	24	25	68
Fredericksburg	16	22	14	52
Galax	2	0	3	5
Giles	9	9	5	23
Gloucester	12	21	10	43
Goochland	5	6	15	26
Grayson	10	13	5	28
Greene	13	4	14	31

continued

County/City of Injury	Year of Death 2005	2006	2007	Total
Greensville	8	10	3	21
Halifax	13	13	21	47
Hampton	20	31	28	79
Hanover	25	21	27	73
Harrisonburg	10	11	1	22
Henrico	75	89	66	230
Henry	9	34	15	58
Highland	0	1	2	3
Hopewell	4	5	8	17
Isle of Wight	8	16	16	40
James City	10	17	8	35
King and Queen	5	5	7	17
King George	5	5	7	17
King William	4	3	7	14
Lancaster	4	9	9	22
Lee	20	11	16	47
Lexington	2	3	2	7
Loudoun	30	23	37	90
Louisa	12	16	24	52
Lunenburg	2	6	11	19
Lynchburg	14	13	24	51
Madison	4	3	9	16
Manassas	8	8	8	24
Martinsville	4	8	3	15
Mathews	4	8	4	16
Mecklenburg	16	18	17	51
Middlesex	6	3	7	16
Montgomery	33	15	24	72
Nelson	6	6	12	24
New Kent	7	15	6	28
Newport News	44	52	36	132
Norfolk	72	59	79	210
Northampton	8	6	8	22
Northumberland	8	2	3	13
Norton	4	3	0	7
Nottoway	10	6	8	24
Orange	10	6	14	30
Page	8	4	10	22
Patrick	10	5	7	22
Petersburg	9	16	22	47

continued

County/City of Injury	Year of Death			Total
	2005	2006	2007	
Pittsylvania	22	28	30	80
Poquoson	1	5	1	7
Portsmouth	24	29	20	73
Powhatan	8	14	6	28
Prince Edward	13	9	16	38
Prince George	8	9	12	29
Prince William	54	69	57	180
Pulaski	19	16	23	58
Radford	6	2	5	13
Rappahannock	6	0	4	10
Richmond City	113	127	132	372
Richmond	3	2	2	7
Roanoke City	29	37	30	96
Roanoke	26	27	22	75
Rockbridge	9	12	14	35
Rockingham	23	30	21	74
Russell	18	19	19	56
Salem	7	13	7	27
Scott	5	6	8	19
Shenandoah	12	14	5	31
Smyth	14	13	10	37
South Boston	5	2	1	8
Southampton	13	10	15	38
Spotsylvania	30	29	39	98
Stafford	14	18	43	75
Staunton	2	7	6	15
Suffolk	19	16	36	71
Surry	7	2	7	16
Sussex	9	13	15	37
Tazewell	38	36	11	85
Virginia Beach	103	101	105	309
Warren	11	6	11	28
Washington	26	18	20	64
Waynesboro	9	7	2	18
Westmoreland	6	13	10	29
Williamsburg	10	6	5	21
Winchester	16	15	2	33
Wise	13	31	28	72
Wythe	10	11	14	35
York	15	14	17	46

continued

County/City of Injury	Year of Death 2005	2006	2007	Total
TOTAL IN STATE	**2193**	**2316**	**2334**	**6843**
Out of State	34	29	52	115
Unknown	21	8	18	47
TOTAL	**2248**	**2353**	**2404**	**7005**

SUICIDE DEATHS (N=906)

In 2007, suicide deaths occurred most frequently in males (74.1%) and those aged 45-54 years (23%). Fifty-five percent of suicides were committed using some type of a firearm. The suicide rate has remained relatively constant since 1999.

- Whites committed suicide 2.2 times the rate of blacks, 3.6 times the rate of Hispanics, and 2.4 times the rate of Asians (12.7 per 100,000 for whites compared to 5.8 per 100,000 for blacks, 3.6 per 100,000 for Hispanics, and 5.3 per 100,000 for Asians).
- White males were 11.3 times more likely to commit suicide than Hispanic females.
- Fairfax continued to be the locality with the highest number of resident suicides, having 9.2 percent of the suicide deaths in 2007.

Figure 20. Suicide Deaths by Age Group by Gender, 2007

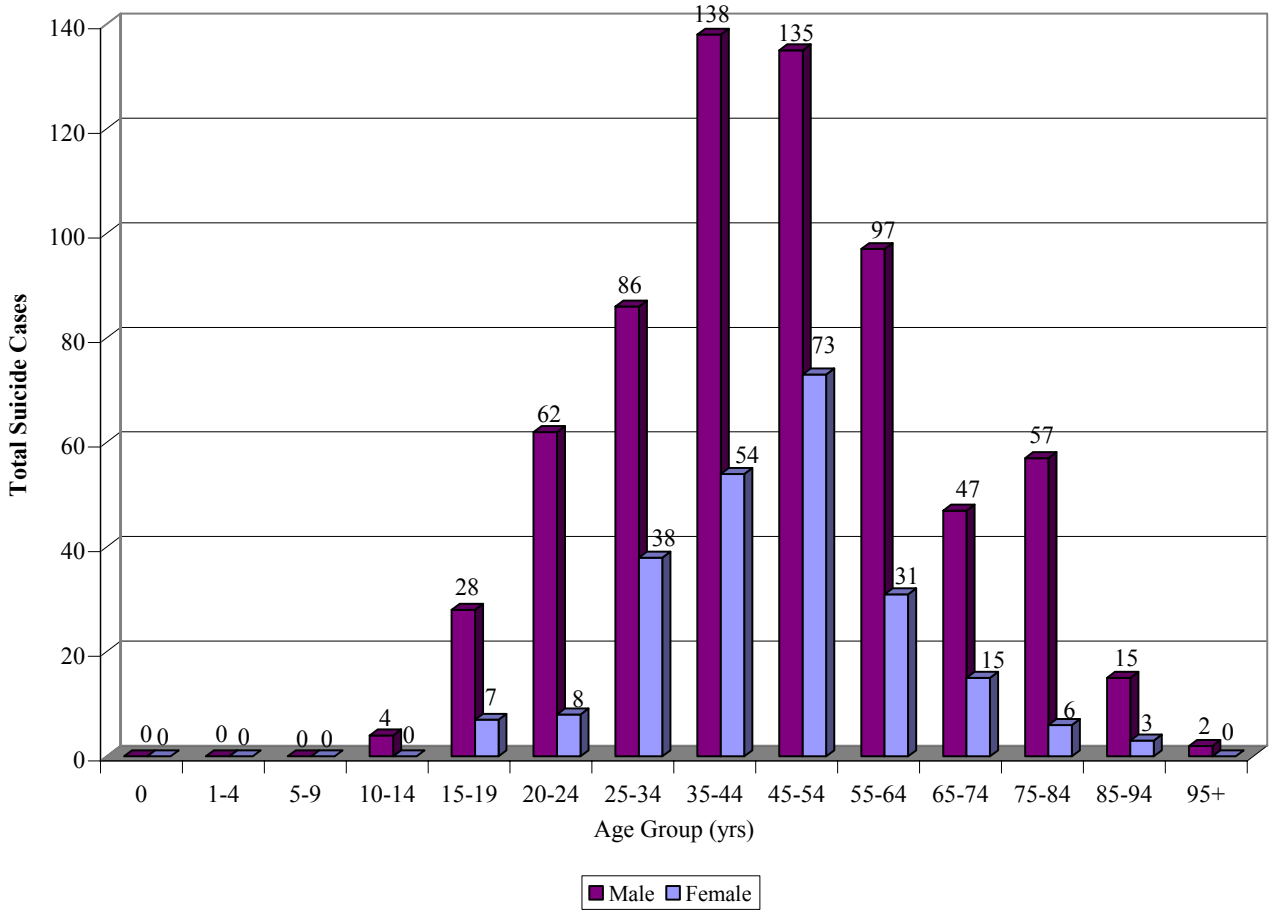


Figure 21. Suicide Deaths by Race/Ethnicity, 2007

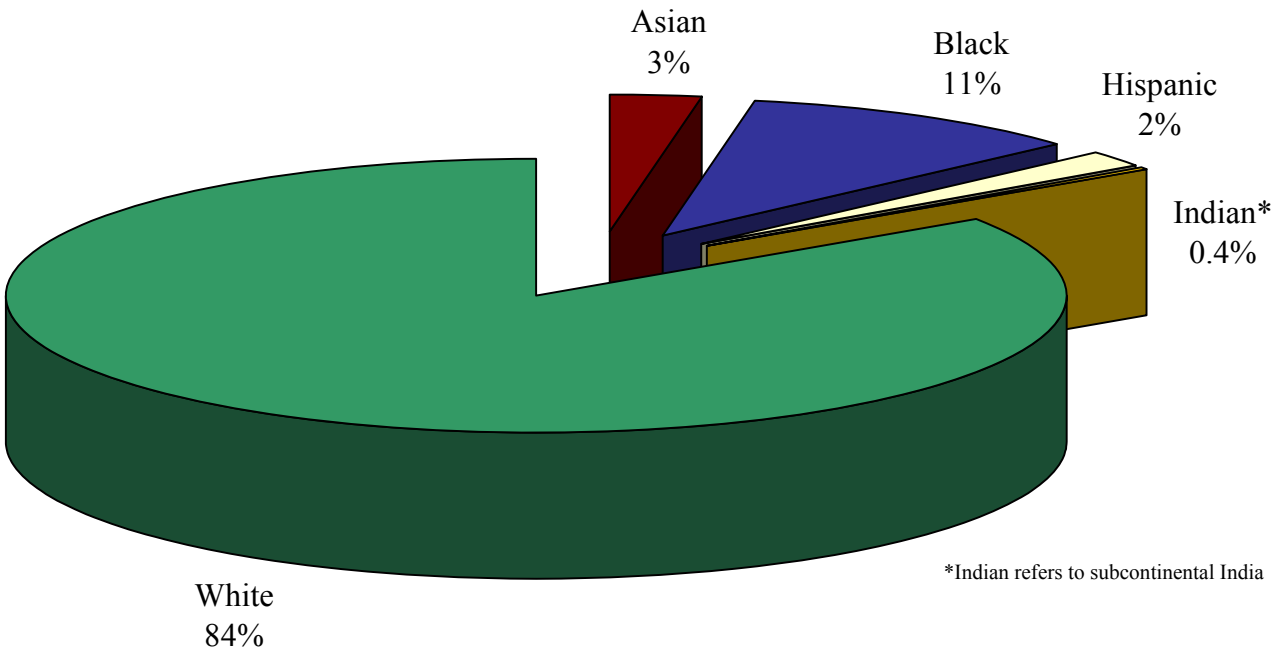
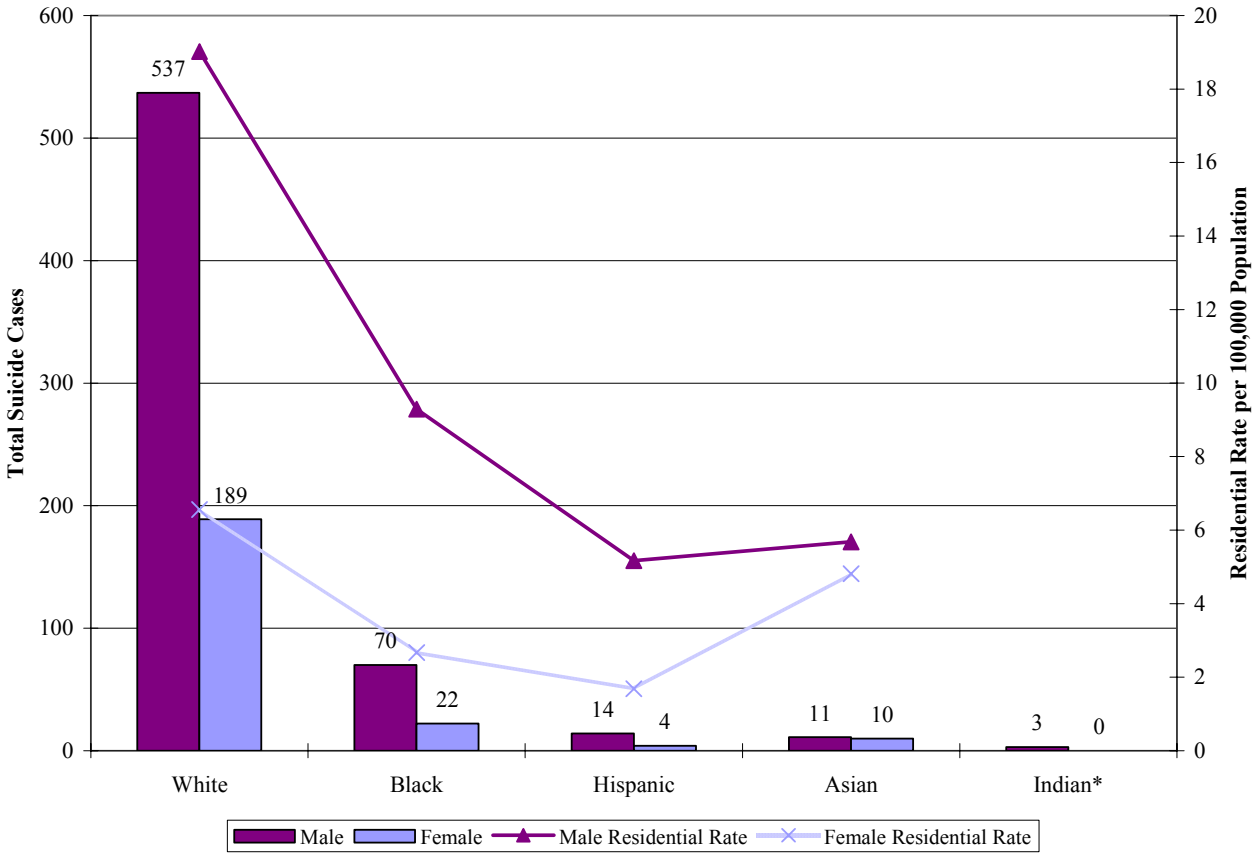


Figure 22. Suicide Deaths & Rates by Race/Ethnicity, 2007



*Indian refers to subcontinental India

Figure 23. Suicide Deaths & Rate by Year of Death, 1999-2007

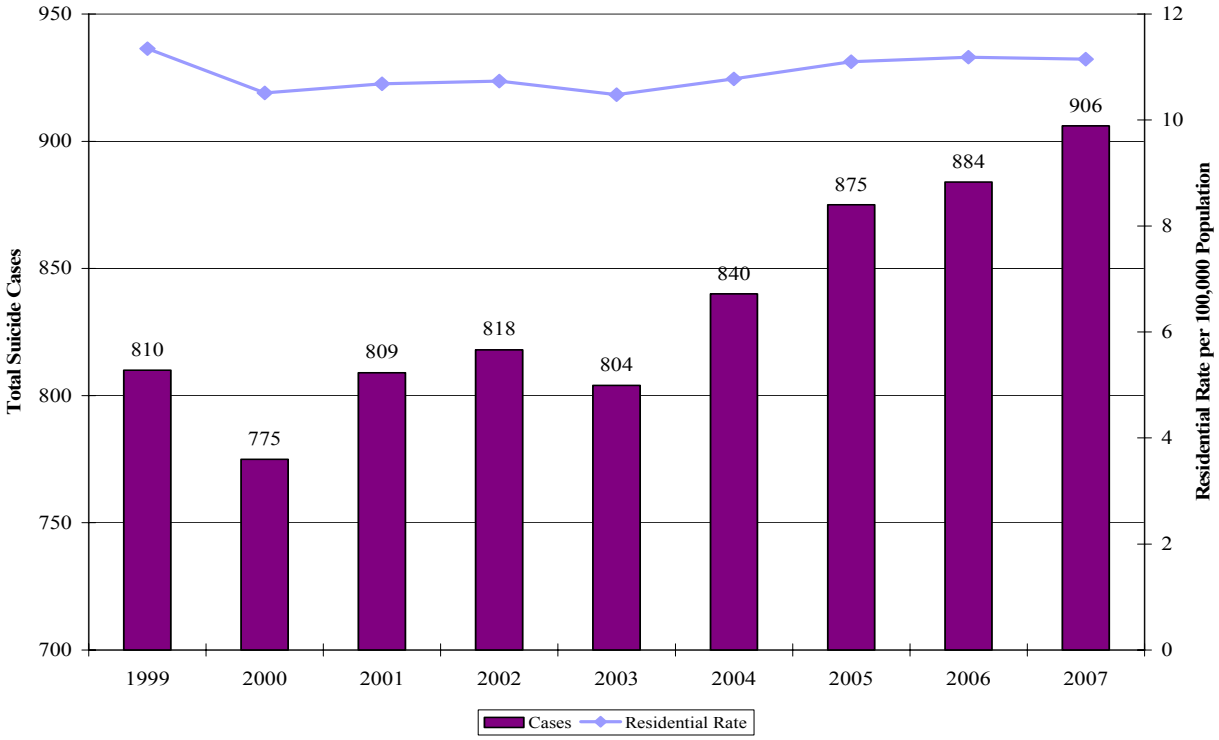


Figure 24. Suicide Deaths by Month of Death, 2007

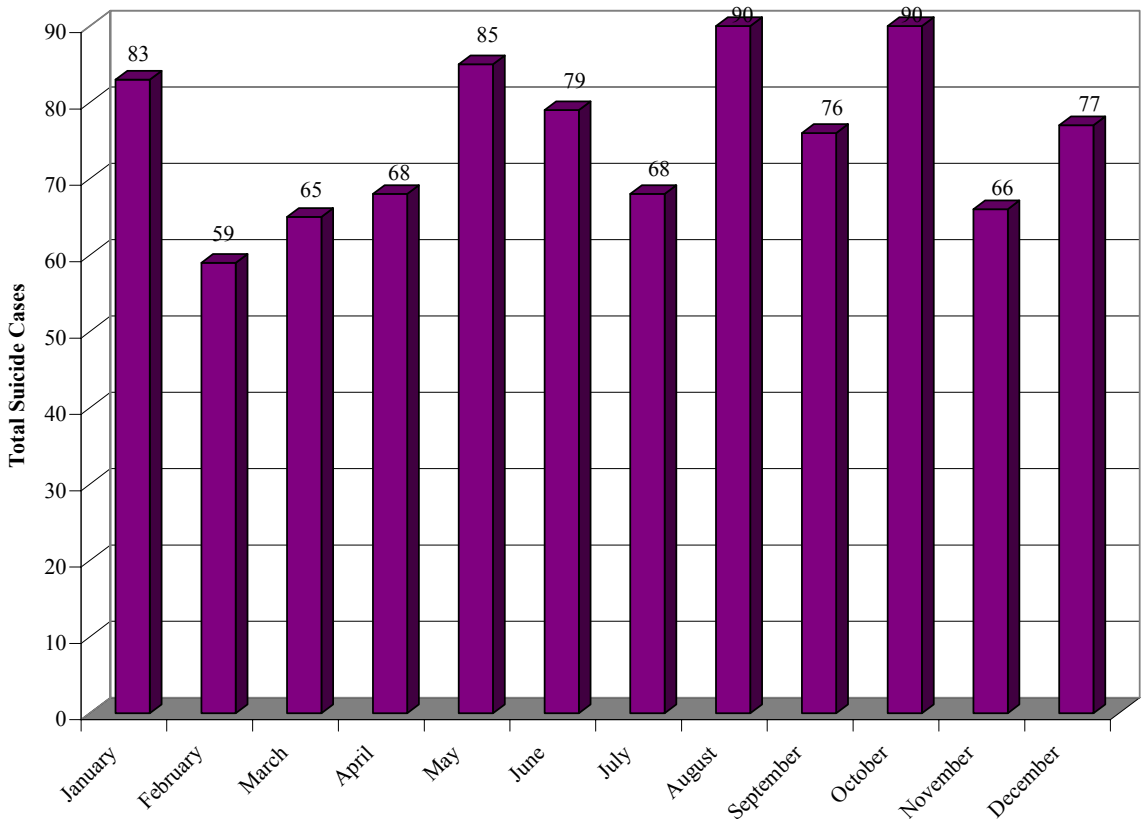


Figure 25. Suicide Deaths by Day of Death, 2007

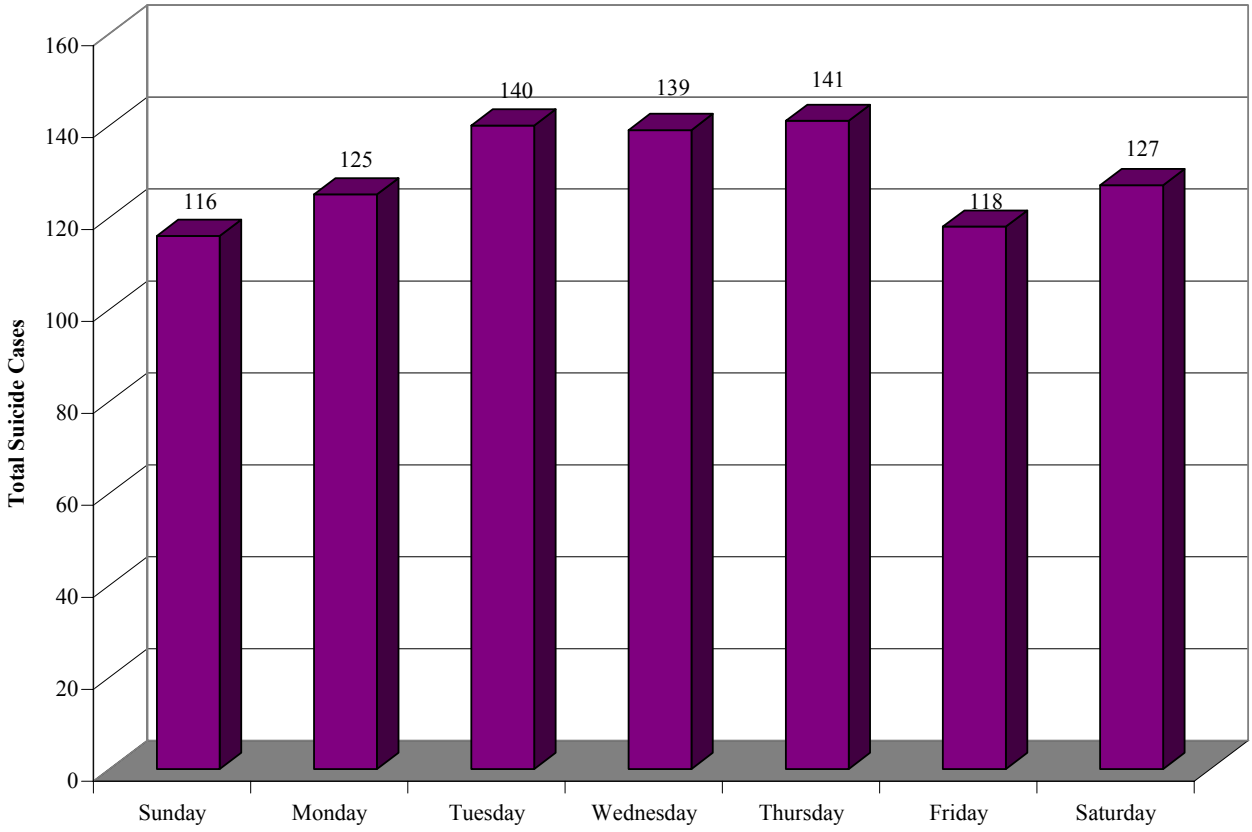


Table 13. Suicide Deaths by Method of Death, 2007

Method of Death	Total Cases	Autopsied
Asphyxia		
Drowned	10	8
Hanging	167	63
Helium	2	1
Plastic bag	6	1
Suffocation/Smothering	1	1
Drug Use		
Ingested and/or injected illicit, prescription, and/or OTC medications	150	129
Fire		
Burned self	4	4
Smoke inhalation (Carbon Monoxide)	2	2
Jump		
Jumped from height	16	12
Motor Vehicle		
Bus	1	1
Car	1	1
Tractor trailer	1	0
Train	4	3
Poisoned		
Carbon Monoxide- (Generator or motor vehicle exhaust)	26	10
Ingested and/or injected other type of poison (Eythlene glycol, etc.)	5	5
Traumatic Injury		
Shot self with firearm	494	477
Handgun	(382)	(370)
Rifle	(44)	(43)
Shotgun	(68)	(64)
Cut/Stabbed self	14	9
Other traumatic causes	2	2
Total	**906**	**729**

Table 14. Suicide Deaths by City/County of Residence, 2007

City/County of Residence	Total	Rate
Accomack	2	5.2
Albemarle	9	9.7
Alexandria	11	7.9
Alleghany	2	12.2
Amelia	1	7.9
Amherst	6	18.6
Appomattox	1	7.0
Arlington	11	5.4
Augusta	11	15.5
Bath	0	0.0
Bedford City	2	31.8
Bedford	4	6.0
Bland	1	14.5
Botetourt	3	9.4
Bristol	3	17.1
Brunswick	2	11.2
Buchanan	6	25.1
Buckingham	3	18.8
Buena Vista	0	0.0
Campbell	3	5.7
Caroline	6	22.0
Carroll	6	20.6
Charles City	0	0.0
Charlotte	2	16.2
Charlottesville	5	12.1
Chesapeake	18	8.2
Chesterfield	27	9.0
Clarke	0	0.0
Clifton Forge	0	0.0
Colonial Heights	3	16.9
Covington	2	32.4
Craig	1	19.5
Culpeper	10	21.9
Cumberland	0	0.0
Danville	3	6.7
Dickenson	6	37.1
Dinwiddie	3	11.7
Emporia	0	0.0
Essex	0	0.0
Fairfax City	3	12.8
Fairfax	83	8.2
Falls Church	1	9.1
Fauquier	5	7.5
Floyd	2	13.7
Fluvanna	2	7.9
Franklin City	0	0.0
Franklin	8	15.6

City/County of Residence	Total	Rate
Frederick	9	12.3
Fredericksburg	10	44.6
Galax	1	14.7
Giles	3	17.4
Gloucester	5	13.0
Goochland	2	9.7
Grayson	2	12.4
Greene	2	11.2
Greensville	0	0.0
Halifax	4	11.3
Hampton	13	8.9
Hanover	15	15.2
Harrisonburg	4	9.1
Henrico	23	7.9
Henry	10	18.0
Highland	0	0.0
Hopewell	1	4.3
Isle of Wight	1	2.9
James City	4	6.5
King and Queen	4	58.1
King George	2	8.8
King William	1	6.4
Lancaster	4	34.7
Lee	4	17.0
Loudoun	19	6.8
Louisa	7	21.9
Lunenburg	1	7.7
Lynchburg	5	7.0
Madison	3	21.9
Manassas	3	8.5
Martinsville	4	27.4
Mathews	0	0.0
Mecklenburg	5	15.6
Middlesex	1	9.4
Montgomery	20	22.4
Nelson	0	0.0
New Kent	3	17.5
Newport News	16	8.9
Norfolk	29	12.3
Northampton	2	14.9
Northumberland	2	15.5
Norton	0	0.0
Nottoway	0	0.0
Orange	4	12.3
Page	5	20.7
Patrick	4	21.2
Petersburg	4	12.2

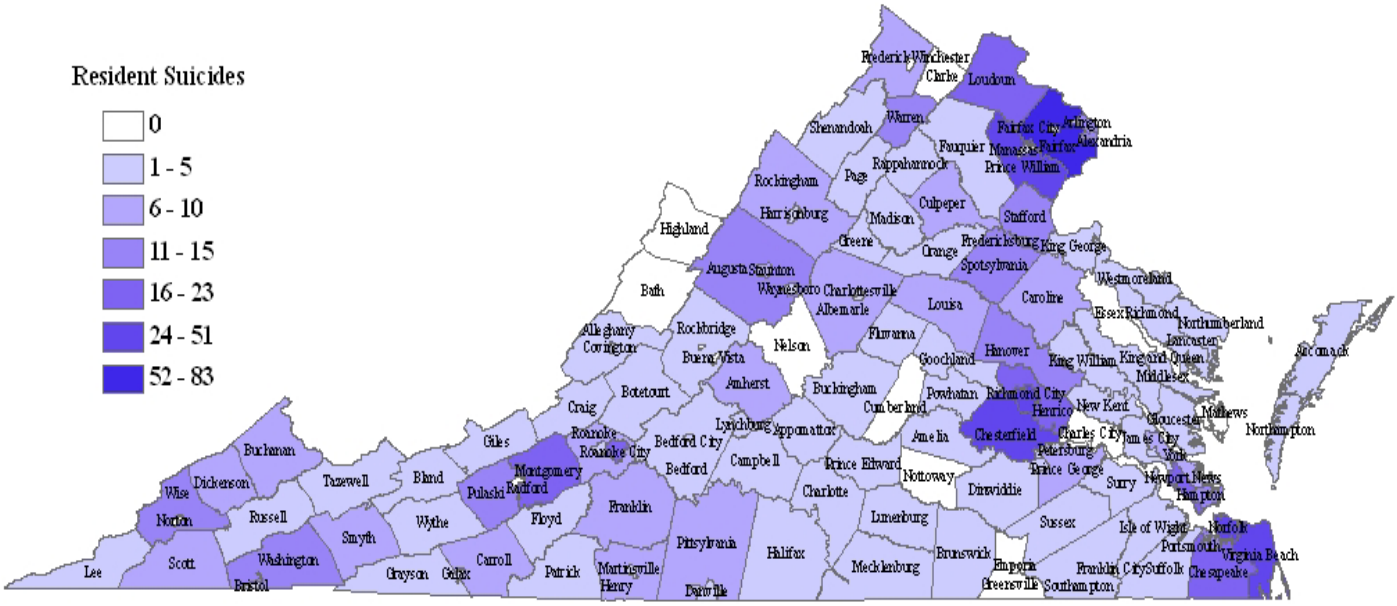
continued

City/County of Residence	Total	Rate
Pittsylvania	9	14.8
Poquoson	1	8.4
Portsmouth	13	12.7
Powhatan	1	3.6
Prince Edward	2	9.4
Prince George	9	25.1
Prince William	30	8.3
Pulaski	11	31.4
Radford	0	0.0
Rappahannock	4	55.6
Richmond City	26	13.0
Richmond	2	21.8
Roanoke City	19	20.5
Roanoke	6	6.6
Rockbridge	5	23.3
Rockingham	10	13.6
Russell	4	13.9
Salem	5	19.8
Scott	10	43.9
Shenandoah	3	7.4
Smyth	7	21.8
South Boston	0	0.0

City/County of Residence	Total	Rate
Southampton	1	5.7
Spotsylvania	14	11.7
Stafford	11	9.1
Staunton	8	33.6
Suffolk	2	2.5
Surry	1	14.1
Sussex	1	8.2
Tazewell	4	9.1
Virginia Beach	51	11.7
Warren	11	30.3
Washington	15	28.4
Waynesboro	3	13.9
Westmoreland	2	11.6
Williamsburg	2	16.1
Winchester	0	0.0
Wise	11	26.4
Wythe	5	17.5
York	10	16.3
TOTAL FOR STATE RESIDENTS	**867**	**11.2**
OUT OF STATE	39	ND†
TOTAL	**906**	**ND**

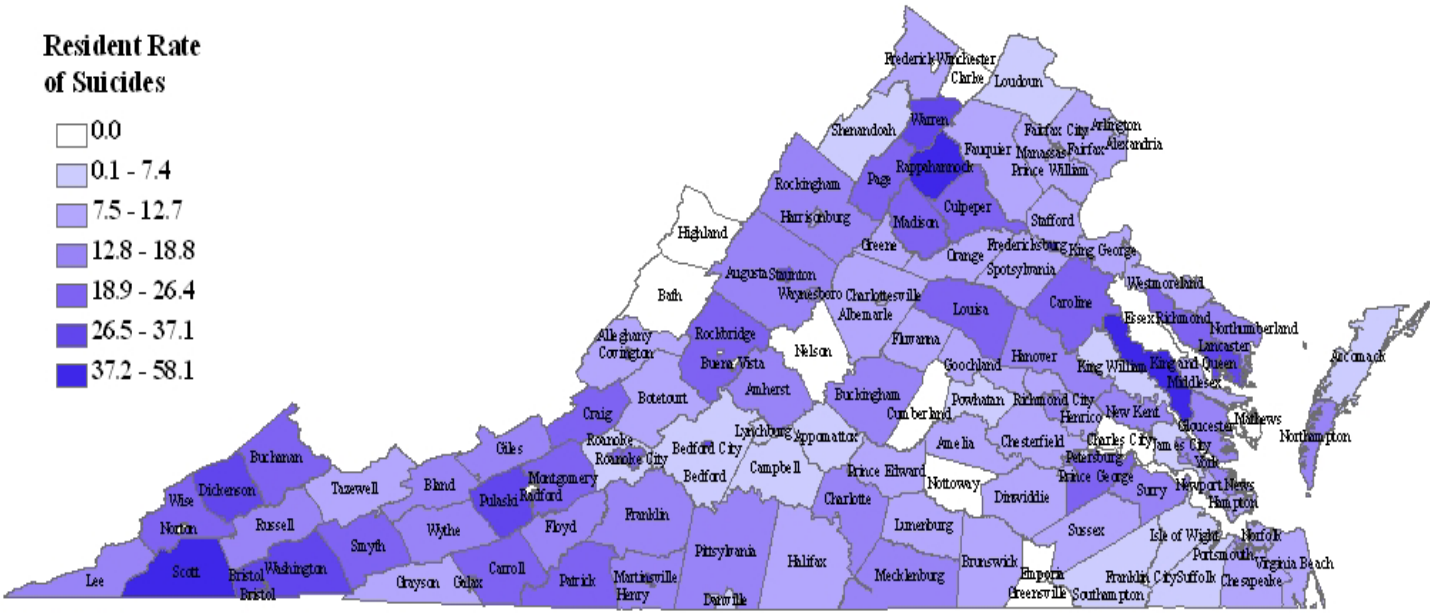
† ND- No Denominator

Figure 26. Suicide Deaths by City/County of Residence, 2007



Thirty-nine suicides were non-residents. Map reflects residency but not necessarily where the fatal injury and/or death occurred.

Figure 27. Suicide Rates by City/County of Residence, 2007



Rate is per 100,000 residents. Thirty-nine suicides were by non-residents.

Table 15. Suicide Deaths by City/County of Injury by Year of Death, 2005-2007

	Year of Death			
County/City of Injury	**2005**	**2006**	**2007**	**Total**
Accomack	5	4	2	11
Albemarle	6	2	6	14
Alexandria	8	12	11	31
Alleghany	1	3	2	6
Amelia	2	2	1	5
Amherst	5	4	6	15
Appomattox	4	2	0	6
Arlington	27	14	12	53
Augusta	10	12	11	33
Bath	0	1	0	1
Bedford City	0	1	1	2
Bedford	8	7	6	21
Bland	0	2	1	3
Botetourt	7	3	4	14
Bristol	5	4	4	13
Brunswick	3	2	2	7
Buchanan	8	5	6	19
Buckingham	0	3	3	6
Buena Vista	1	0	0	1

continued

County/City of Injury	Year of Death 2005	2006	2007	Total
Campbell	11	6	3	20
Caroline	3	3	6	12
Carroll	7	6	8	21
Charles City	0	0	0	0
Charlotte	0	3	2	5
Charlottesville	9	11	7	27
Chesapeake	14	19	20	53
Chesterfield	30	29	25	84
Clarke	2	2	1	5
Colonial Heights	1	1	2	4
Covington	1	2	2	5
Craig	3	0	1	4
Culpeper	5	6	10	21
Cumberland	1	0	1	2
Danville	8	7	3	18
Dickenson	2	2	5	9
Dinwiddie	8	3	3	14
Emporia	0	3	0	3
Essex	0	0	1	1
Fairfax City	0	2	2	4
Fairfax	80	85	86	251
Falls Church	1	0	1	2
Fauquier	9	7	4	20
Floyd	1	2	2	5
Fluvanna	2	2	3	7
Franklin City	1	0	0	1
Franklin	7	5	8	20
Frederick	5	9	7	21
Fredericksburg	2	6	4	12
Galax	2	1	1	4
Giles	1	2	3	6
Gloucester	10	7	6	23
Goochland	4	2	5	11
Grayson	5	3	2	10
Greene	1	4	2	7
Greensville	0	2	0	2
Halifax	2	5	4	11
Hampton	12	13	16	41
Hanover	10	12	15	37
Harrisonburg	5	2	4	11

continued

County/City of Injury	Year of Death 2005	2006	2007	Total
Henrico	25	37	26	88
Henry	13	11	12	36
Highland	1	0	0	1
Hopewell	2	1	1	4
Isle of Wight	1	5	1	7
James City	1	5	4	10
King and Queen	1	2	4	7
King George	1	3	2	6
King William	2	1	1	4
Lancaster	3	0	3	6
Lee	5	5	4	14
Lexington	1	0	1	2
Loudoun	17	20	23	60
Louisa	3	5	8	16
Lunenburg	2	6	1	9
Lynchburg	3	8	6	17
Madison	2	2	4	8
Manassas	4	2	3	9
Martinsville	4	0	4	8
Mathews	4	1	0	5
Mecklenburg	9	4	6	19
Middlesex	3	0	1	4
Montgomery	9	11	22	42
Nelson	4	2	1	7
New Kent	3	3	3	9
Newport News	13	11	15	39
Norfolk	25	27	34	86
Northampton	1	0	4	5
Northumberland	3	1	3	7
Norton	0	0	0	0
Nottoway	0	1	0	1
Orange	6	6	4	16
Page	5	6	5	16
Patrick	5	3	4	12
Petersburg	3	1	4	8
Pittsylvania	11	13	9	33
Poquoson	1	1	1	3
Portsmouth	13	8	14	35
Powhatan	5	5	2	12
Prince Edward	2	3	3	8

continued

County/City of Injury	Year of Death 2005	2006	2007	Total
Prince George	2	6	7	15
Prince William	37	32	29	98
Pulaski	7	11	10	28
Radford	4	1	0	5
Rappahannock	1	0	4	5
Richmond City	37	32	25	94
Richmond	4	1	1	6
Roanoke City	18	10	15	43
Roanoke	14	11	7	32
Rockbridge	2	5	4	11
Rockingham	7	9	10	26
Russell	5	5	4	14
Salem	3	4	7	14
Scott	3	3	12	18
Shenandoah	10	7	5	22
Smyth	7	3	11	21
South Boston	1	3	0	4
Southampton	2	4	1	7
Spotsylvania	6	13	18	37
Stafford	12	6	14	32
Staunton	3	4	7	14
Suffolk	6	11	1	18
Surry	0	0	1	1
Sussex	0	1	2	3
Tazewell	12	11	4	27
Virginia Beach	30	61	50	141
Warren	8	3	12	23
Washington	8	6	10	24
Waynesboro	6	6	3	15
Westmoreland	4	4	2	10
Williamsburg	8	10	2	20
Winchester	3	6	1	10
Wise	8	9	13	30
Wythe	7	4	4	15
York	4	3	8	15
Total in State	**870**	**882**	**900**	**2652**
Out of State	5	2	6	13
TOTAL	**875**	**884**	**906**	**2665**

HOMICIDE DEATHS (N=443)

The number of homicides in Virginia increased 3.7 percent from 2006 to 2007. Homicide deaths occurred most frequently in males (79.2%), in blacks (58.5%), and in those aged 25-34 years (23.3%).

- Seventy-four percent of homicides were committed using a firearm, with handguns the most common type of firearm used in 64 percent of all homicide cases.
- Richmond City continues to be the locality with the highest number (13.8%) of all homicide injuries leading to death, followed by Norfolk (12%) and Montgomery County (7.4%).
    - Montgomery County saw an increase in 2007 due to the mass shooting at Virginia Tech; previously, there were 2 and 3 homicides in 2005 and 2006, respectively.
- Fifty-one of 134 Virginian localities, or 38.1 percent, experienced no homicides at all in 2007.

Figure 28. Homicide Deaths by Gender by Age Group, 2007

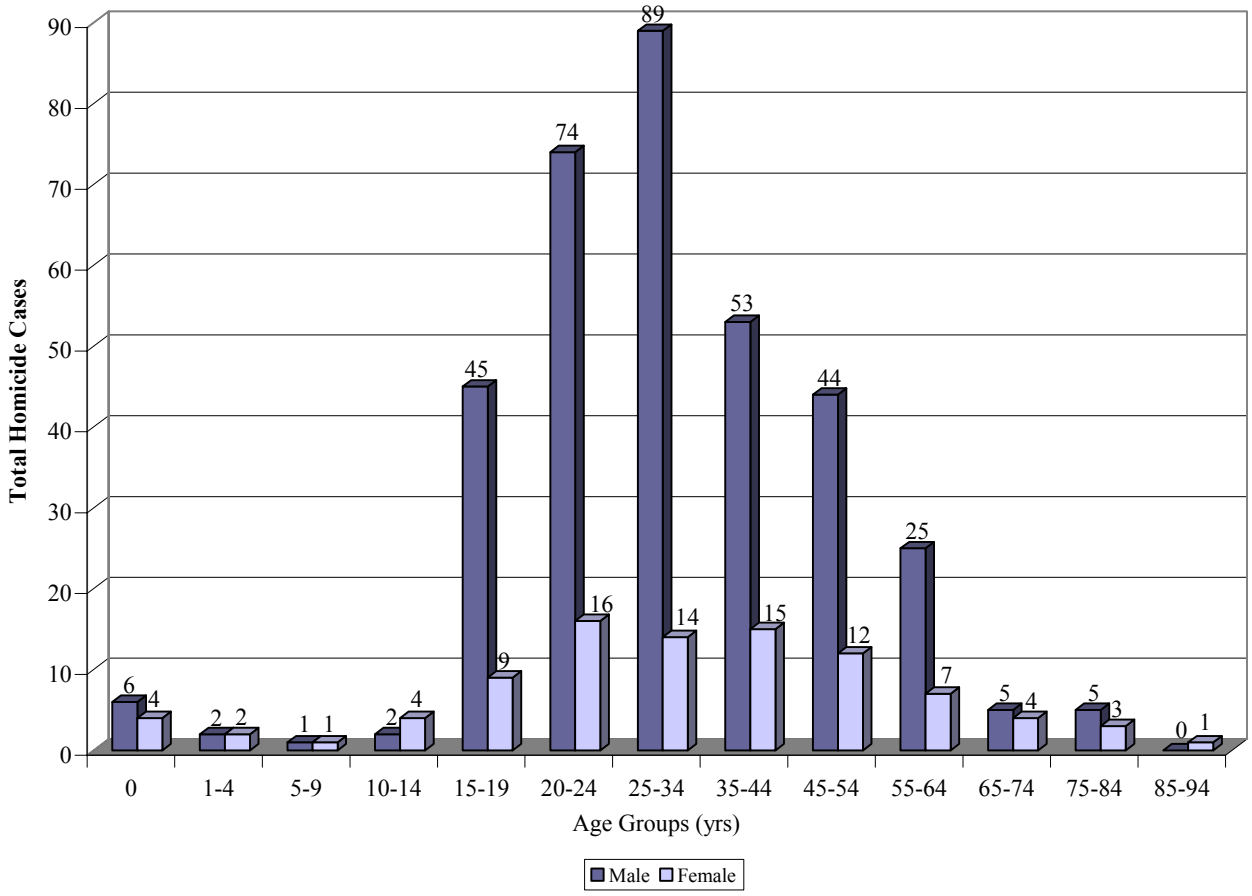
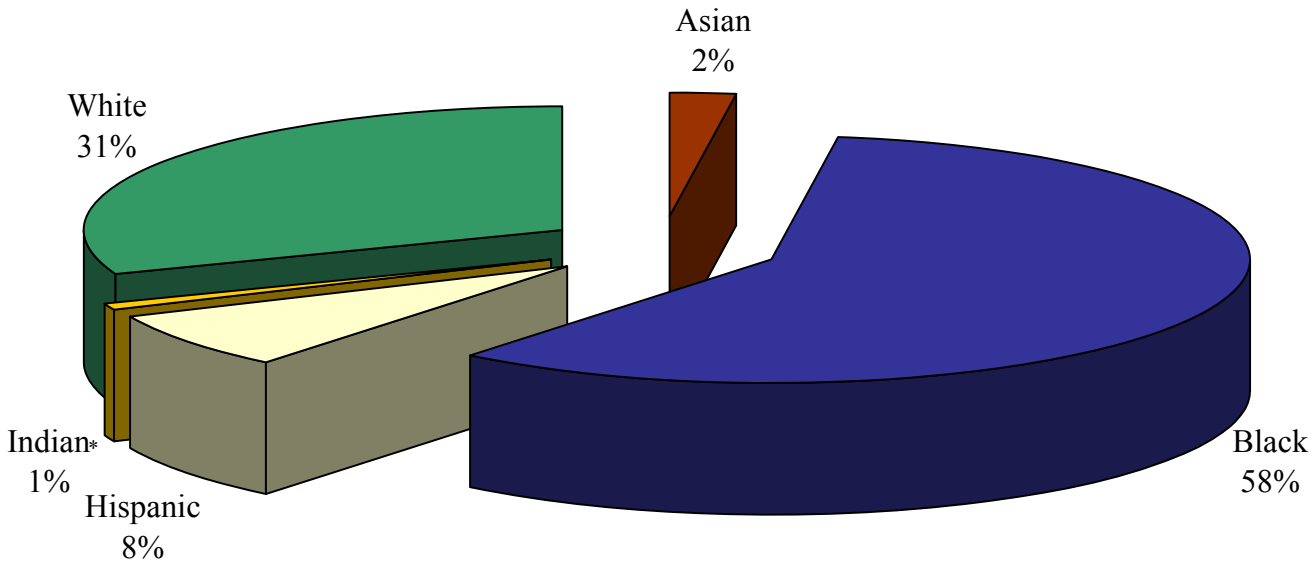


Figure 29. Homicide Deaths by Race/Ethnicity



*Indian refers to subcontinental India

Figure 30. Homicide Deaths & Rate by Year of Death, 1999-2007

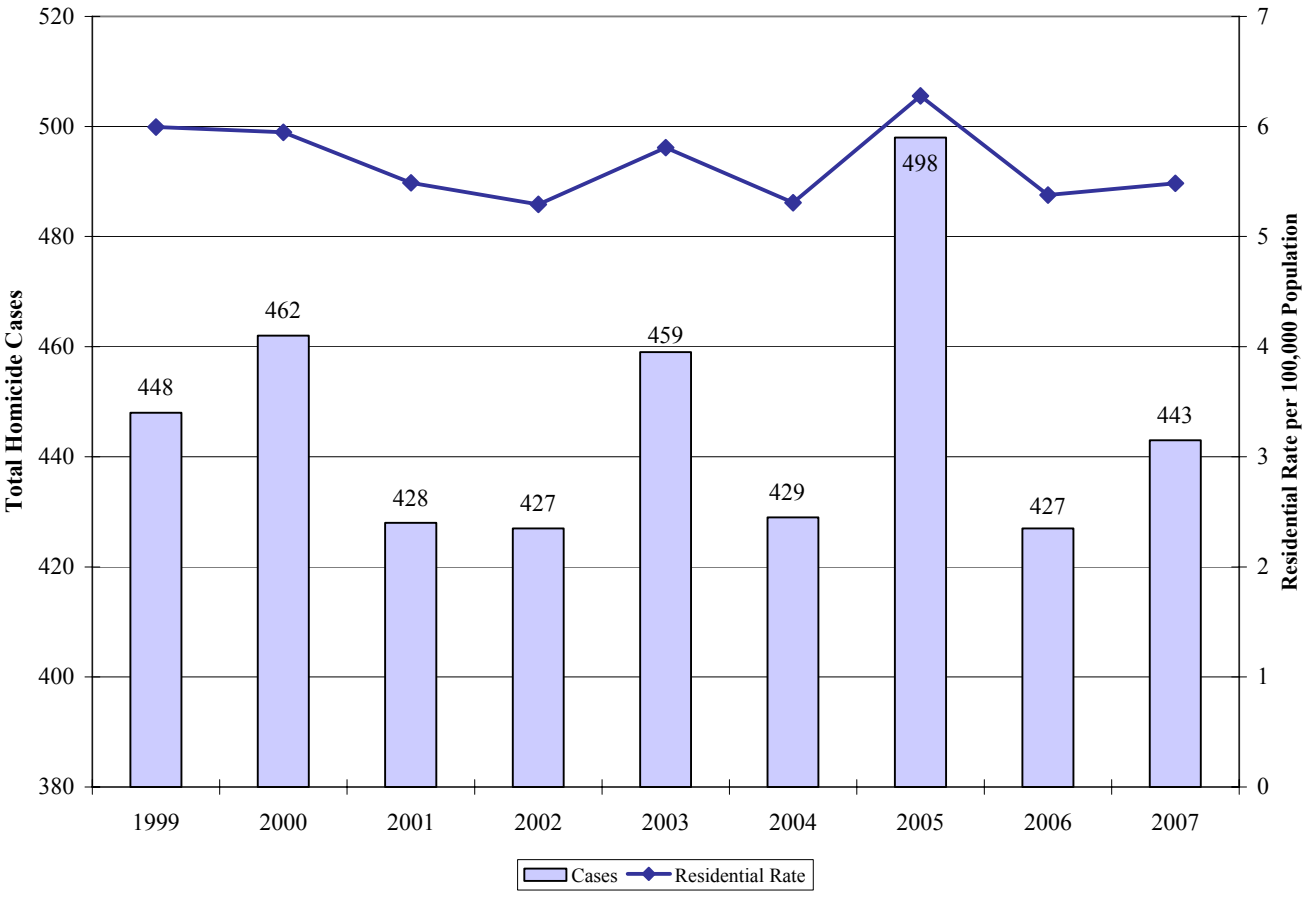


Table 16. Homicide Deaths by Method of Death, 2007

Method of Death	Total Case	Autopsied
Asphyxia		
Drowned	2	2
Strangled by assailant(s)	7	7
Suffocated/Smothered	3	3
Fire		
Thermal and/or inhalation injuries	2	2
Traumatic Injury		
Beaten by assailant(s)	42	40
Fall/Push	1	1
Poisoned (Ethanol and/or drugs)	2	2
Shot by assailant(s) with firearm	327	324
Handgun	(283)	(280)
Rifle	(8)	(8)
Shotgun	(14)	(14)
Unspecified	(22)	(22)
Stabbed by assailant(s)	49	48
Traumatic - Other	1	1
Vehicular		
Struck with vehicle by assailant(s)	3	3
Unknown		
Homicide - Other	4	4
Total	**443**	**437**

Figure 31. Homicide Deaths by Leading Methods of Death, 2007

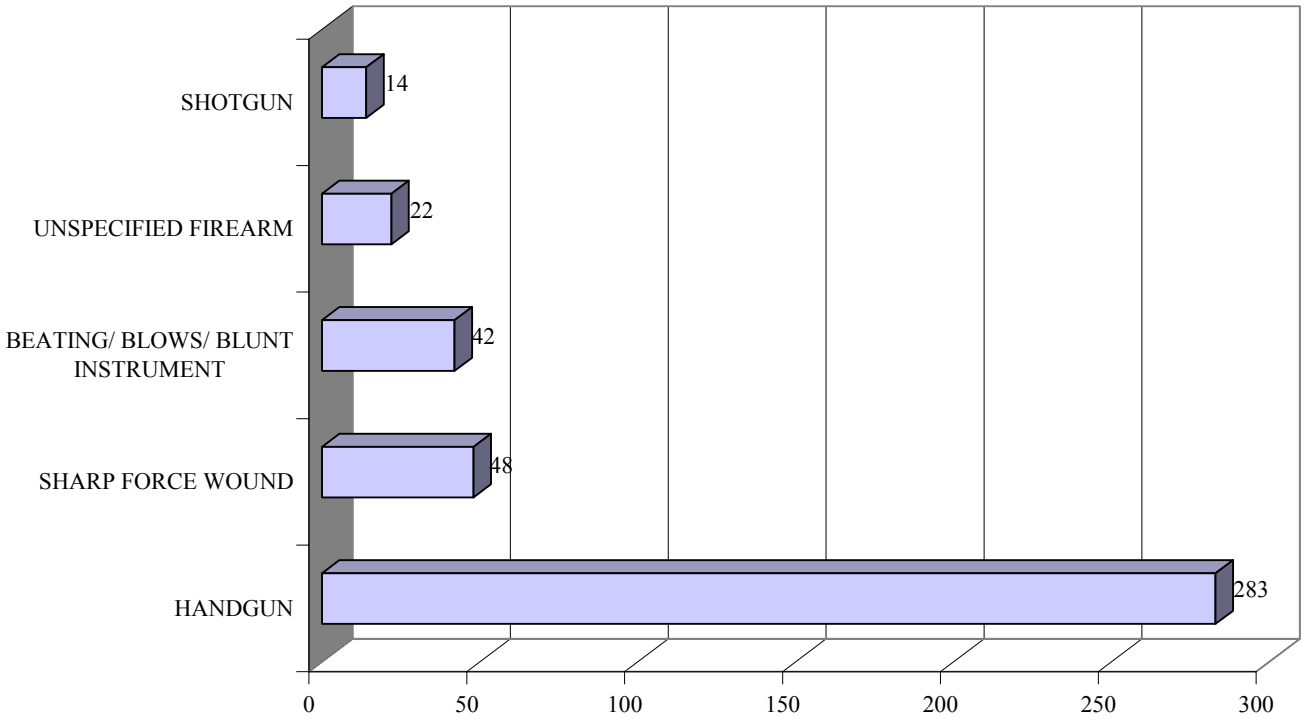


Table 17. Homicide Deaths by City/County of Residence, 2007

City/County of Residency	Total	Rate
Accomack	5	13.0
Albemarle	0	0.0
Alexandria	8	5.7
Alleghany	3	18.3
Amelia	0	0.0
Amherst	1	3.1
Appomattox	2	14.1
Arlington	1	0.5
Augusta	1	1.4
Bath	0	0.0
Bedford City	0	0.0
Bedford	2	3.0
Bland	0	0.0
Botetourt	0	0.0
Bristol	0	0.0
Brunswick	1	5.6
Buchanan	0	0.0
Buckingham	2	12.6
Buena Vista	0	0.0
Campbell	1	1.9
Caroline	2	7.3
Carroll	4	13.7
Charles City	0	0.0
Charlotte	0	0.0
Charlottesville	3	7.3
Chesapeake	13	5.9
Chesterfield	11	3.7
Clarke	0	0.0
Clifton Forge	0	0.0
Colonial Heights	0	0.0
Covington	0	0.0
Craig	0	0.0
Culpeper	1	2.2
Cumberland	2	20.8
Danville	9	20.0
Dickenson	1	6.2
Dinwiddie	1	3.9
Emporia	1	17.8
Essex	1	9.2
Fairfax City	1	4.3
Fairfax	18	1.8
Falls Church	0	0.0
Fauquier	3	4.5
Floyd	0	0.0
Fluvanna	0	0.0
Franklin City	0	0.0
Franklin	1	2.0
Frederick	1	1.4
Fredericksburg	3	13.4

City/County of Residency	Total	Rate
Galax	1	14.7
Giles	1	5.8
Gloucester	0	0.0
Goochland	0	0.0
Grayson	1	6.2
Greene	1	5.6
Greensville	0	0.0
Halifax	2	5.6
Hampton	8	5.5
Hanover	0	0.0
Harrisonburg	0	0.0
Henrico	9	3.1
Henry	3	5.4
Highland	5	204.4
Hopewell	0	0.0
Isle of Wight	2	5.7
James City	1	1.6
King and Queen	1	14.5
King George	0	0.0
King William	2	12.7
Lancaster	0	0.0
Lee	1	4.3
Loudoun	1	0.4
Louisa	4	12.5
Lunenburg	1	7.7
Lynchburg	1	1.4
Madison	0	0.0
Manassas	1	2.8
Martinsville	2	13.7
Mathews	0	0.0
Mecklenburg	1	3.1
Middlesex	1	9.4
Montgomery	11	12.3
Nelson	2	13.1
New Kent	0	0.0
Newport News	30	16.7
Norfolk	46	19.5
Northampton	2	14.9
Northumberland	1	7.8
Norton	0	0.0
Nottoway	1	6.3
Orange	2	6.2
Page	0	0.0
Patrick	1	5.3
Petersburg	7	21.3
Pittsylvania	2	3.3
Poquoson	0	0.0
Portsmouth	15	14.7
Powhatan	0	0.0

continued

City/County of Residency	Total	Rate
Prince Edward	1	4.7
Prince George	4	11.1
Prince William	15	4.2
Pulaski	0	0.0
Radford	0	0.0
Rappahannock	1	13.9
Richmond City	65	32.5
Richmond	1	10.9
Roanoke City	9	9.7
Roanoke	3	3.3
Rockbridge	1	4.7
Rockingham	1	1.4
Russell	0	0.0
Salem	0	0.0
Scott	2	8.8
Shenandoah	0	0.0
Smyth	0	0.0
South Boston	0	0.0
Southampton	3	17.0
Spotsylvania	4	3.4
Stafford	6	5.0
Staunton	0	0.0
Suffolk	8	9.8
Surry	0	0.0
Sussex	0	0.0
Tazewell	3	6.8
Virginia Beach	16	3.7
Warren	1	2.8
Washington	1	1.9
Waynesboro	1	4.6
Westmoreland	0	0.0
Williamsburg	0	0.0
Winchester	2	7.8
Wise	2	4.8
Wythe	0	0.0
York	1	1.6
TOTAL FOR STATE RESIDENTS	**424**	**5.5**
Out of Country	1	ND†
Out of State	18	ND
TOTAL	**443**	**ND**

† ND- No Denominator

Table 18. Homicide Deaths by City/County of Injury, 2005-2007

	Year of Death			
County/City of Injury	**2005**	**2006**	**2007**	**Total**
Accomack	0	5	6	11
Albemarle	2	1	1	4
Alexandria	6	4	7	17
Alleghany	0	0	3	3
Amelia	0	0	0	0
Amherst	2	0	1	3
Appomattox	1	0	2	3
Arlington	3	3	2	8
Augusta	5	3	1	9
Bath	0	0	0	0
Bedford City	0	0	0	0
Bedford	0	1	2	3
Bland	0	0	0	0
Botetourt	2	0	1	3
Bristol	2	4	0	6
Brunswick	2	3	1	6
Buchanan	2	1	0	3
Buckingham	1	1	2	4
Buena Vista	0	0	0	0

continued

County/City of Injury	Year of Death 2005	2006	2007	Total
Campbell	0	2	2	4
Caroline	0	5	4	9
Carroll	1	1	4	6
Charles City	1	0	0	1
Charlotte	0	0	0	0
Charlottesville	2	5	3	10
Chesapeake	15	7	15	37
Chesterfield	9	5	9	23
Clarke	0	0	0	0
Colonial Heights	0	0	0	0
Covington	0	0	0	0
Craig	1	0	0	1
Culpeper	1	1	1	3
Cumberland	1	0	2	3
Danville	8	5	6	19
Dickenson	3	0	1	4
Dinwiddie	3	5	1	9
Emporia	1	1	2	4
Essex	0	0	0	0
Fairfax City	0	1	1	2
Fairfax	32	29	16	77
Falls Church	0	0	0	0
Fauquier	1	2	4	7
Floyd	0	0	0	0
Fluvanna	0	0	0	0
Franklin City	0	0	0	0
Franklin	0	2	1	3
Frederick	0	7	0	7
Fredericksburg	1	0	2	3
Galax	0	1	1	2
Giles	0	1	0	1
Gloucester	0	0	1	1
Goochland	1	1	0	2
Grayson	2	0	1	3
Greene	0	0	1	1
Greensville	1	5	0	6
Halifax	2	1	3	6
Hampton	13	14	7	34
Hanover	1	2	0	3
Harrisonburg	1	4	0	5

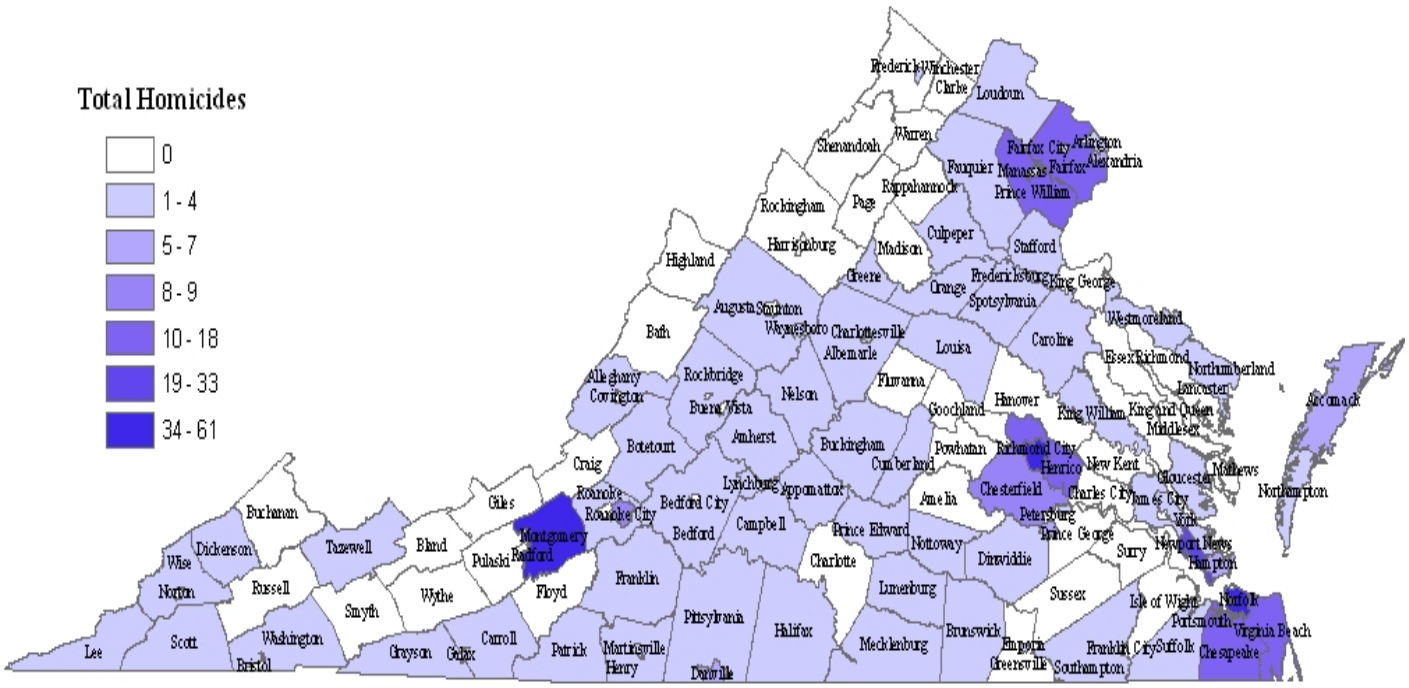
continued

County/City of Injury	Year of Death 2005	2006	2007	Total
Henrico	16	10	15	41
Henry	7	7	3	17
Highland	0	0	0	0
Hopewell	1	4	3	8
Isle of Wight	0	1	0	1
James City	0	1	1	2
King and Queen	1	0	0	1
King George	0	0	0	0
King William	1	0	2	3
Lancaster	0	2	0	2
Lee	1	0	1	2
Lexington	0	0	0	0
Loudoun	5	4	2	11
Louisa	0	0	4	4
Lunenburg	0	1	1	2
Lynchburg	5	2	1	8
Madison	0	0	0	0
Manassas	2	1	1	4
Martinsville	0	0	2	2
Mathews	0	0	0	0
Mecklenburg	3	0	1	4
Middlesex	0	1	0	1
Montgomery	2	3	33	38
Nelson	1	0	1	2
New Kent	0	0	0	0
Newport News	20	20	30	70
Norfolk	63	34	53	150
Northampton	1	2	1	4
Northumberland	1	0	1	2
Norton	0	0	0	0
Nottoway	2	0	1	3
Orange	3	2	1	6
Page	1	1	0	2
Patrick	2	0	1	3
Petersburg	10	10	7	27
Pittsylvania	3	2	4	9
Poquoson	0	0	0	0
Portsmouth	22	18	17	57
Powhatan	0	0	0	0
Prince Edward	3	0	1	4

continued

County/City of Injury	Year of Death 2005	2006	2007	Total
Prince George	1	0	0	1
Prince William	11	12	14	37
Pulaski	0	1	0	1
Radford	0	1	0	1
Rappahannock	0	1	0	1
Richmond City	95	85	61	241
Richmond	1	0	0	1
Roanoke City	15	13	8	36
Roanoke	2	1	2	5
Rockbridge	1	0	1	2
Rockingham	1	1	0	2
Russell	1	2	0	3
Salem	0	0	0	0
Scott	0	0	2	2
Shenandoah	0	0	0	0
Smyth	7	0	0	7
South Boston	0	0	0	0
Southampton	1	1	3	5
Spotsylvania	0	4	4	8
Stafford	2	1	3	6
Staunton	1	0	0	1
Suffolk	10	8	3	21
Surry	1	0	0	1
Sussex	0	1	0	1
Tazewell	1	0	3	4
Virginia Beach	24	20	18	62
Warren	0	2	0	2
Washington	2	0	1	3
Waynesboro	0	0	1	1
Westmoreland	1	2	1	4
Williamsburg	3	1	0	4
Winchester	1	2	2	5
Wise	3	0	2	5
Wythe	0	1	0	1
York	2	3	1	6
Total in State	**492**	**422**	**435**	**1349**
Out of State	2	1	6	9
Unknown	4	4	2	10
TOTAL	**498**	**427**	**443**	**1368**

Figure 32. Homicide Deaths by City/County of Injury, 2007



Six homicidal injuries leading to death occurred outside of Virginia; while for two, it is not known where the incident occurred.

UNDETERMINED DEATHS (N=121)

Cause of death was determined in 62.8 percent of deaths with an undetermined manner. For deaths where manner of death was undetermined but the cause of death was determined, drug use was the most frequently associated cause (31.1%) followed by gunshot wound (20%).

- Forty-three of the 76 undetermined manner and undetermined cause of death cases were designated as Sudden and Unexpected Infant Death (SUID) (refer to Glossary for SUID definition)

Figure 33. Undetermined Deaths by Age Group by Gender, 2007

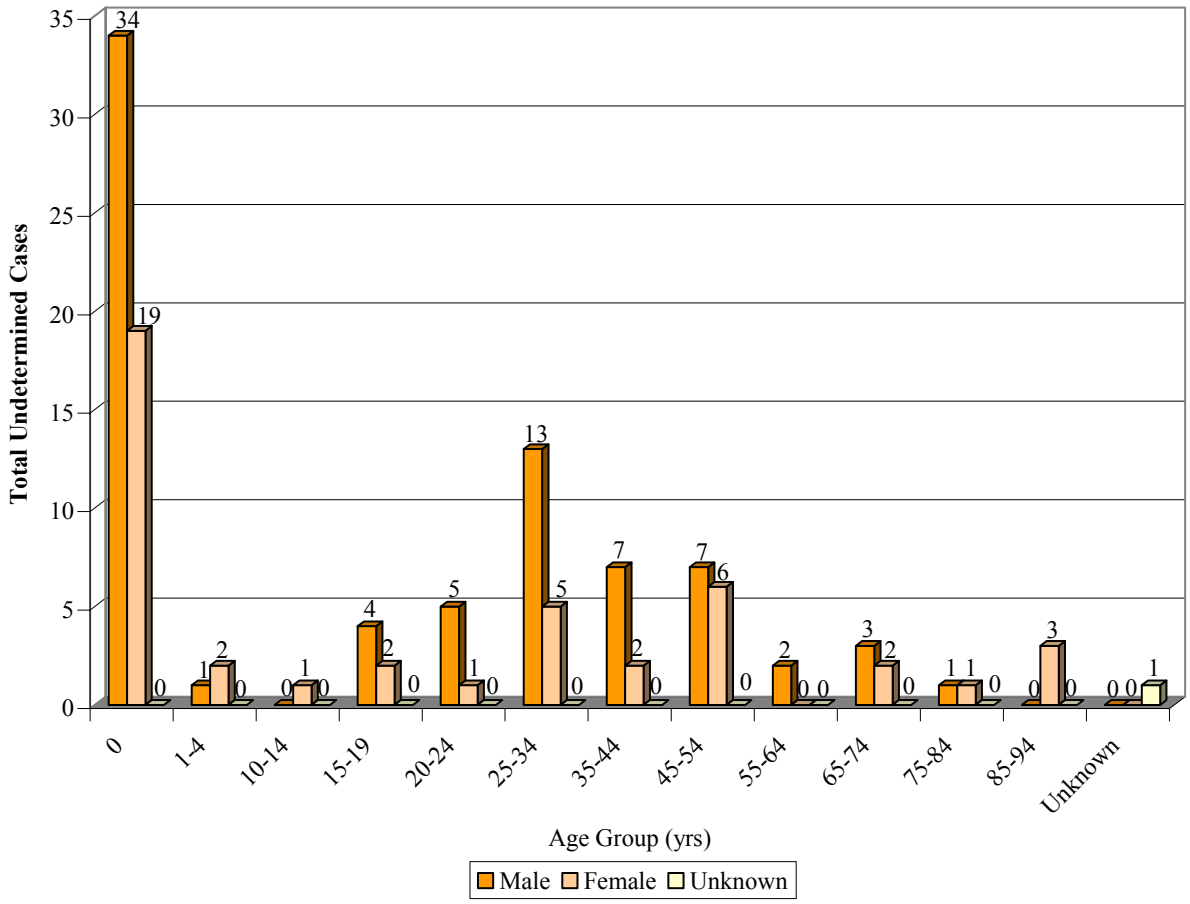


Figure 34. Undetermined Deaths by Race/Ethnicity, 2007

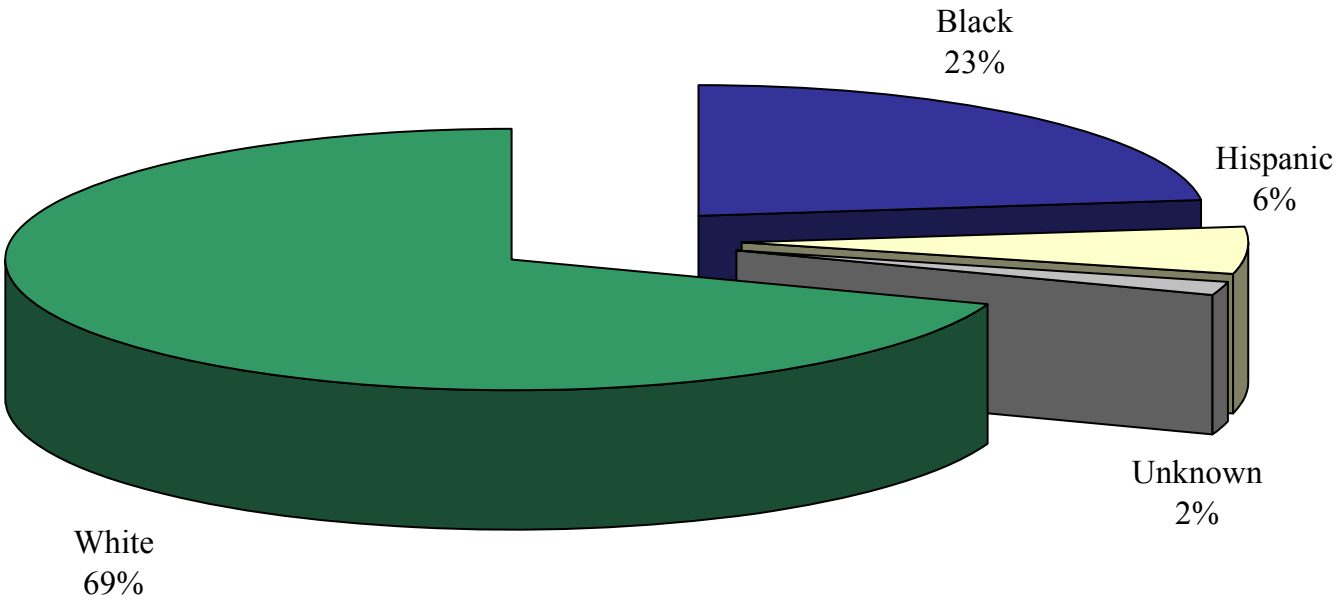


Figure 35. Undetermined Deaths & Rate by Year of Death, 1999-2007

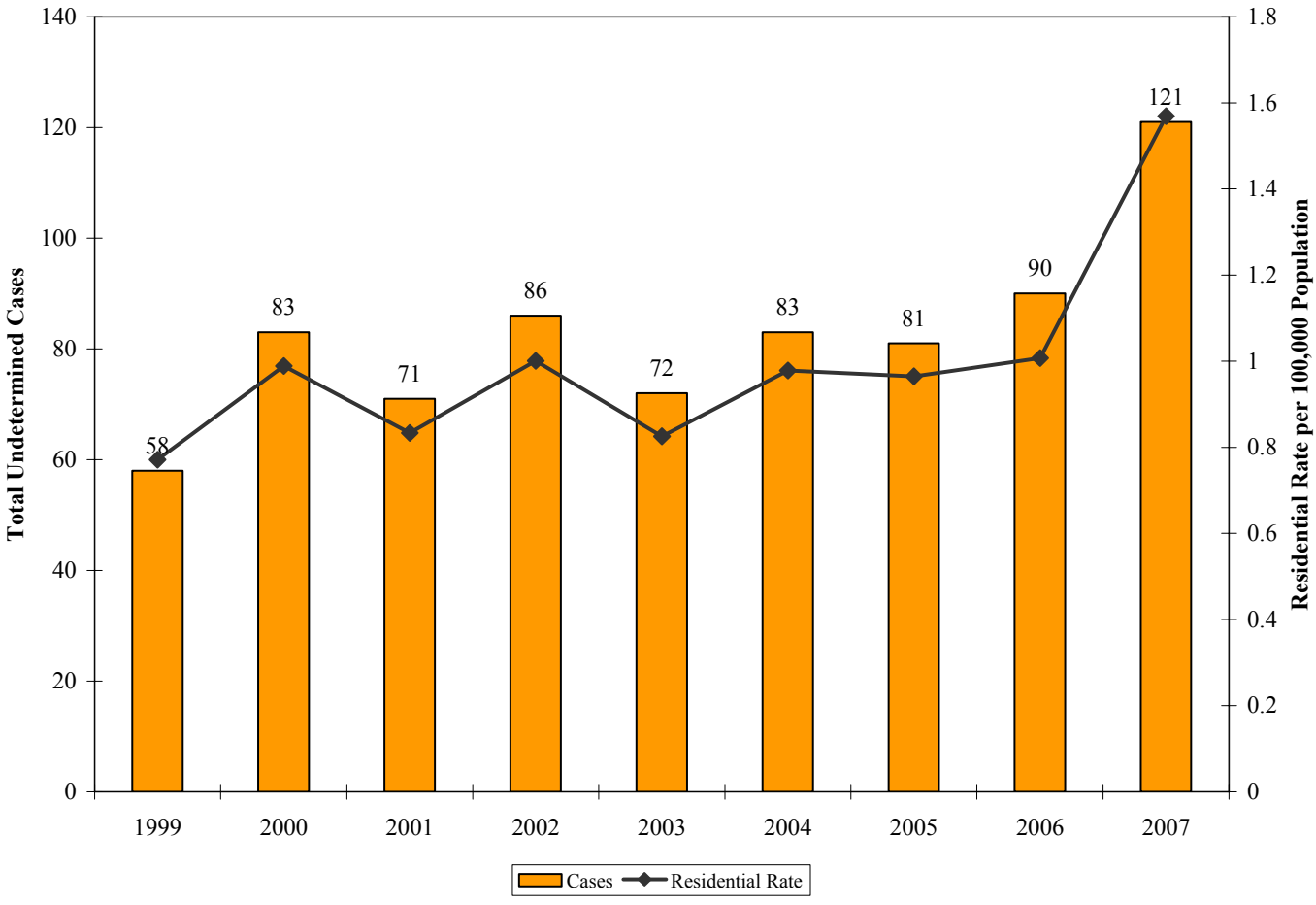


Table 19. Undetermined Deaths by Method of Death, 2007

	Total Cases	Autopsied
Undetermined Manner & Cause of Death		
Undetermined after autopsy and/or toxicology	76	74
Subtotal for Undetermined Manner & Cause of Death	**76**	**74**
Undetermined Manner but Cause of Death Determined		
Asphyxia		
Drowning	2	2
Hanging	1	1
Mechanical/Positional	1	1
Drug Use		
Ingested/Injected medication	14	12
Fall		
Fall from height/same height	3	3
Fire		
Explosion/Victim of fire	2	2
Poisoned		
Inhaled toxic agent	3	1
Traumatic Injury		
Gunshot wound	9	9
Sharp force wound	2	2
Other traumatic causes	2	2
Vehicular		
Aircraft	3	3
Car	2	2
Unknown	1	1
Subtotal for Undetermined Manner but Cause of Death Determined	**45**	**41**
Total	**121**	**115**

SECTION 4: DEATHS OF CHILDREN (17 Years of Age and Younger) (N=389)

The 389 deaths of children 17 years of age and younger represented 6.5 percent of all deaths investigated by the OCME in 2007, and a decrease of 4 percent from the number of childhood deaths in 2006.

- Male decedents comprised 63 percent of the total deaths in children.
- The <1 year old age group had the largest percentage of deaths (38.6%) among children 17 years of age and younger.
- The leading causes of death in children were blunt force injuries to the head/neck (69 deaths or 17.7%), SUID (43 deaths or 11.1%) and Sudden Infant Death Syndrome (SIDS) (41 or 10.5%).
- For the cases that fell under OCME jurisdiction, black children died at a rate 5.8 times that of Asian children, 2 times that of Hispanic children, and 1.9 times that of white children.

Figure 36. Deaths of Children by Manner of Death, 2007

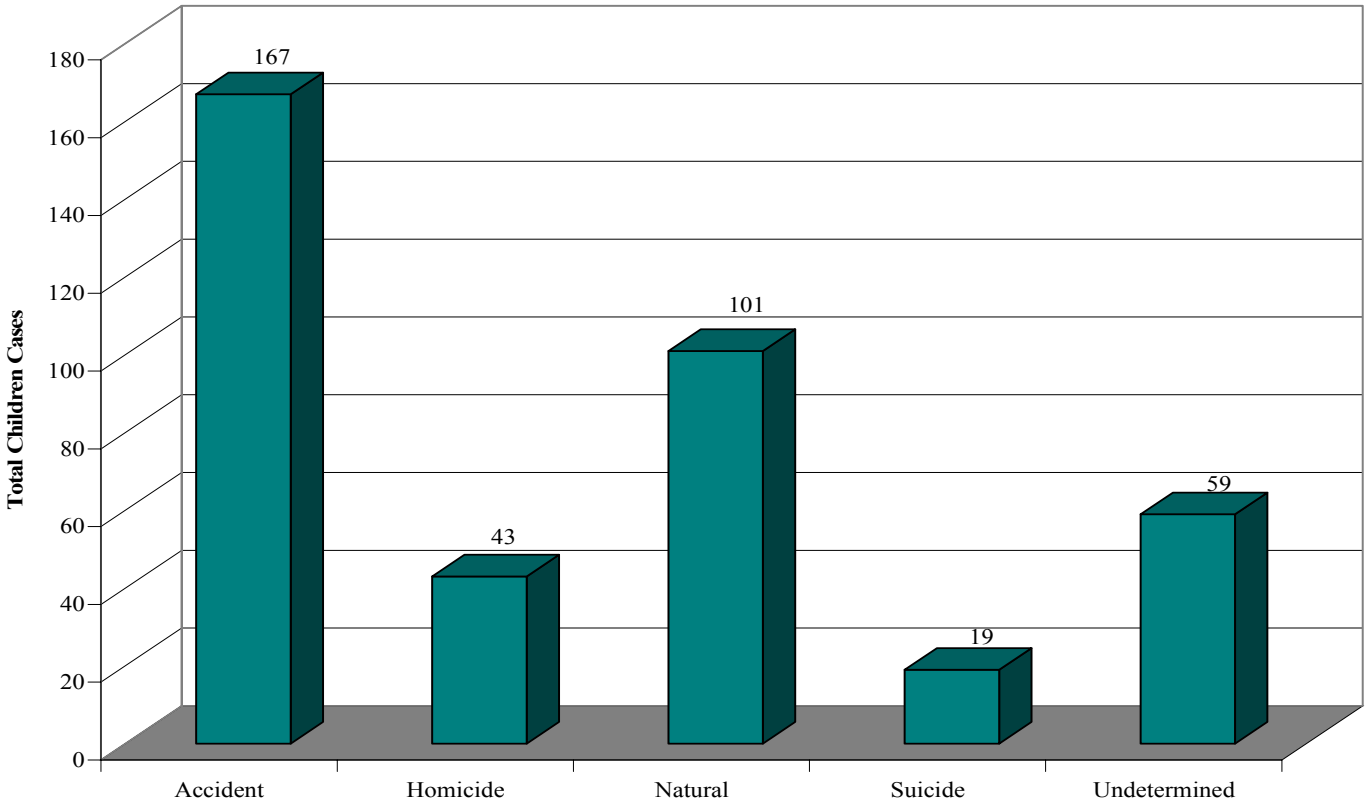


Figure 37. Deaths of Children by Age by Gender, 2007

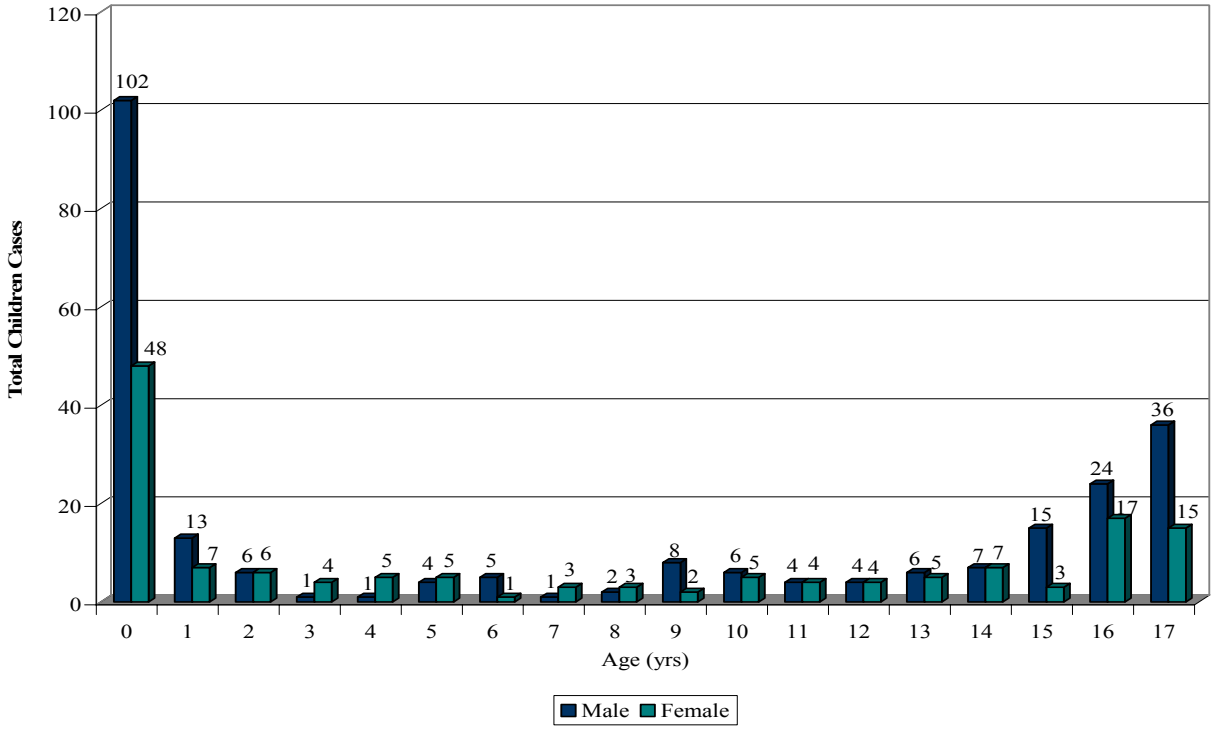
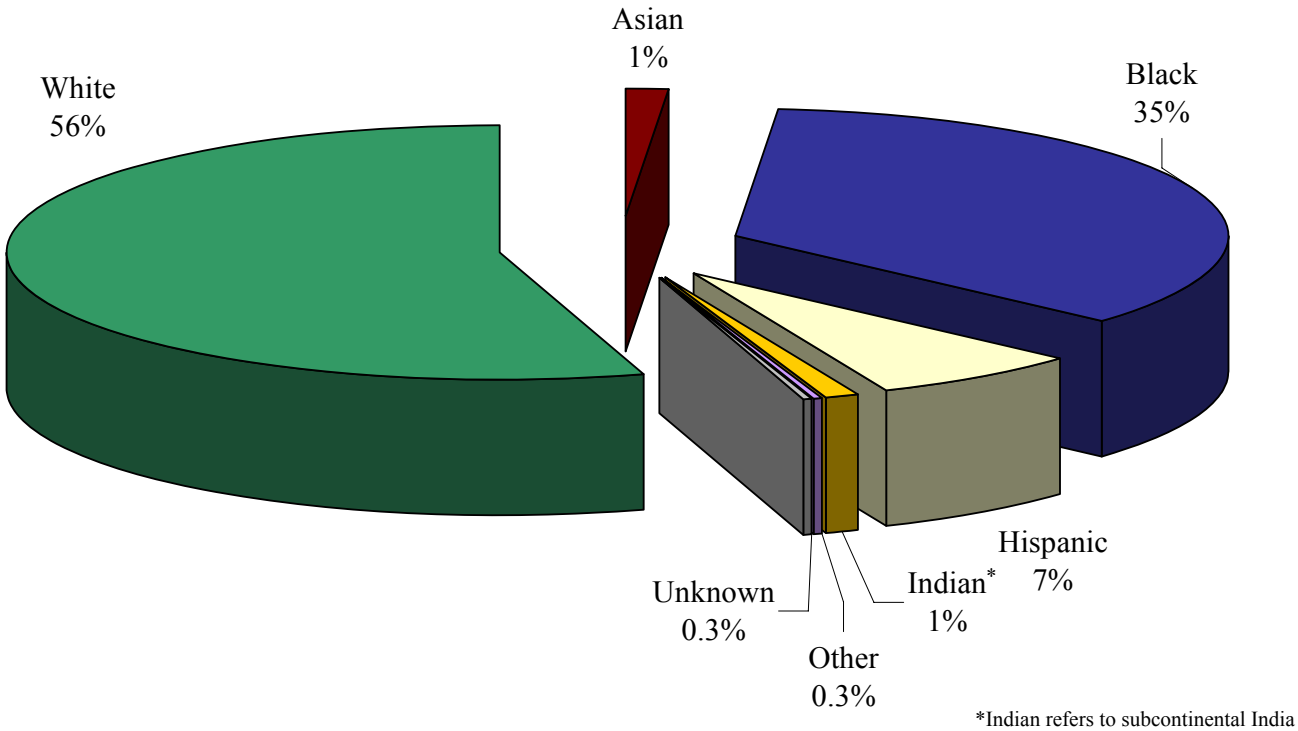
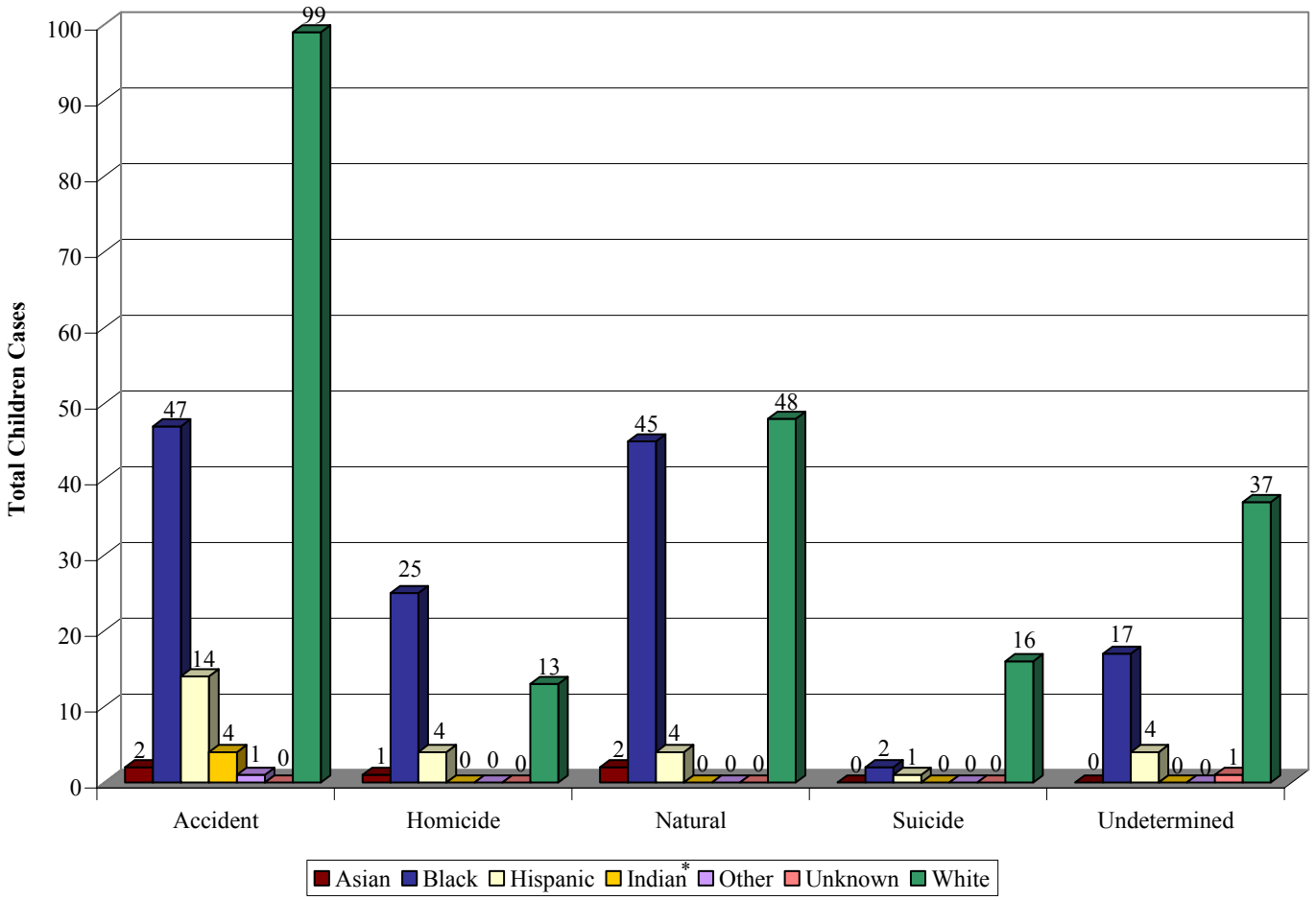


Figure 38. Proportion of Deaths of Children by Race/Ethnicity, 2007



*Indian refers to subcontinental India

Figure 39. Deaths of Children by Manner by Race/Ethnicity, 2007



*Indian refers to subcontinental India

Table 20. Deaths of Children by Cause of Death, 2007

Natural Deaths	Total Cases	Autopsied
Pulmonary Diseases/Disorders	**16**	**15**
Asthma	6	5
Pneumonia	9	9
Other Pulmonary Disease/Disorder	1	1
Central Nervous System Diseases/Disorders	**8**	**7**
Seizure Disorder	3	3
Vascular Disease	3	2
Meningitis (Bacterial or Viral)	1	1
Other CNS Disease/Disorder	1	1

continued

Cardiovascular Diseases/Disorders	**5**	**4**
Hypertension	1	1
Congenital Defect	1	1
Vascular Dissection/Ruptures	1	1
Other Cardiac Disease/Disorder	2	1
Gastrointestinal Diseases/Disorders	**2**	**2**
Other GI Disease/Disorder	2	2
Genitourinal Diseases/Disorders	**1**	**1**
Other GU Disease/Disorder	1	1
Perinatal And Pediatric Diseases/Disorders	**49**	**48**
Maternal Complications	1	1
Fetal Complications	7	7
Sudden Infant Death Syndrome	41	40
Systemic Diseases/Disorders	**9**	**9**
AIDS/HIV	1	1
Sepsis	1	1
Other Infectious Disease	6	6
Other Systemic Disease/Disorder	1	1
Other Natural Diseases/Disorders	**11**	**10**
Other Natural Disease/Disorder	11	10
Natural Subtotal	**101**	**96**
Unnatural Deaths	**Total Cases**	**Autopsied**
Asphyxia	**52**	**39**
Choking (Aspiration: Food or Foreign Object)	2	2
Drowning	22	14
Hanging	8	6
Mechanical	10	9
Positional	1	1
Suffocation/Smothering	7	7
Oxygen Replacement/Displacement	2	0
Electrocution	**1**	**0**
High Voltage	1	0
Exposure	**2**	**2**
Hyperthermia	2	2
Fire Injuries	**19**	**13**
Thermal Burns	1	0
Inhalation of Combustion Products	9	7
Thermal Burns & Inhalation of Combustions Products	9	6
Gunshot Wound	**37**	**37**
Handgun	33	33
Rifle	2	2
Shotgun	1	1

continued

Unknown Gun	1	1
Blunt Force Injuries	**109**	**28**
Head/Neck	69	16
Chest	3	0
Abdomen	2	0
Trunk	5	1
Extremities	1	0
Multiple	29	11
Penetrating Injuries	**1**	**1**
Other Penetrating Injuries	1	1
Substance Abuse	**9**	**9**
Prescription Drug Poisoning	3	3
Illegal (Street) Drug Poisoning	1	1
CO Poisoning (Excludes Fires)	1	1
Inhalant Poisoning	2	2
OTC Poisoning	1	1
Not Otherwise Specified Poisoning	1	1
Other Unnatural Deaths	**2**	**2**
Other Unnatural	2	2
Unnatural Subtotal	**232**	**131**
Undetermined Deaths	**Total Cases**	**Autopsied**
Undetermined After Autopsy and/or Investigation	**56**	**56**
Sudden and Unexpected Infant Death (SUID)	43	43
Other Undetermined	13	13
Undetermined Subtotal	**56**	**56**
TOTAL	**389**	**283**

NATURAL DEATHS OF CHILDREN (N=101)

The less than 1 year old age group comprised 63.4 percent of all the natural deaths of children. The rate of natural deaths of black children is 2.9 times greater than white children (10.4 per 100,000 black children versus 3.6 per 100,000 white children).

Figure 40. Natural Deaths of Children by Gender by Age Group, 2007

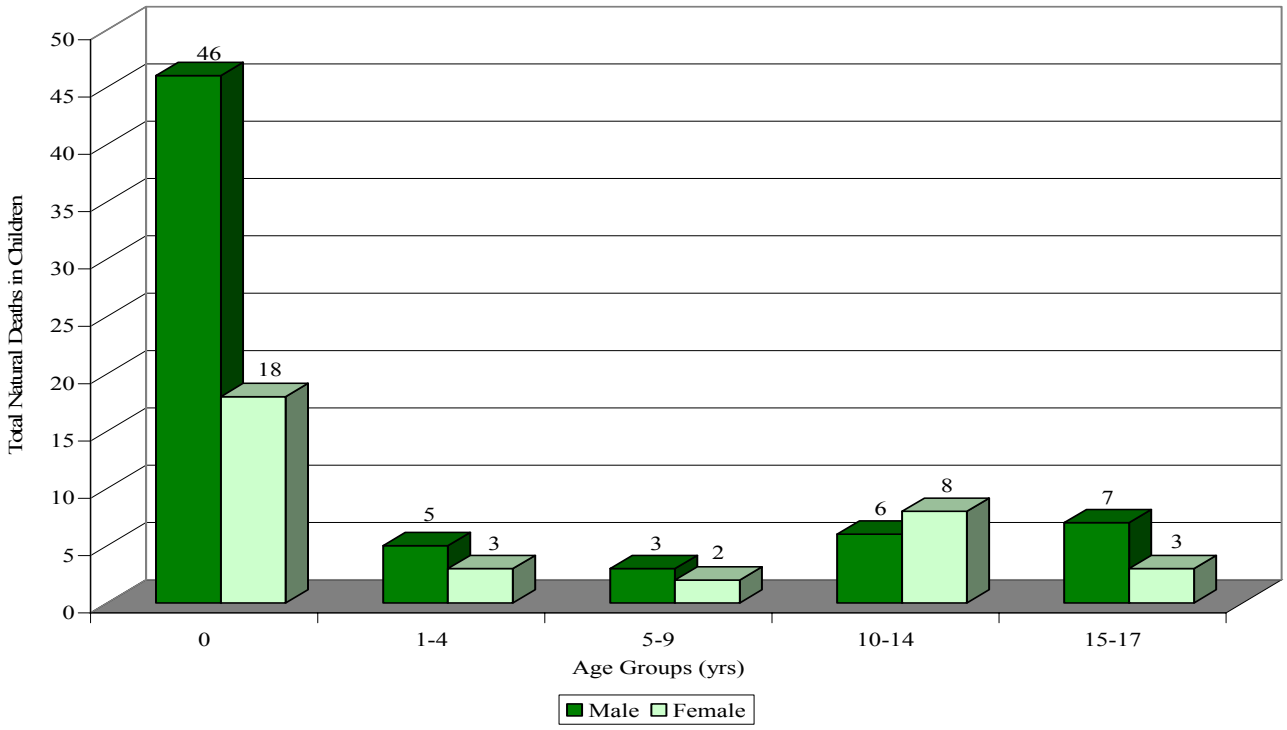
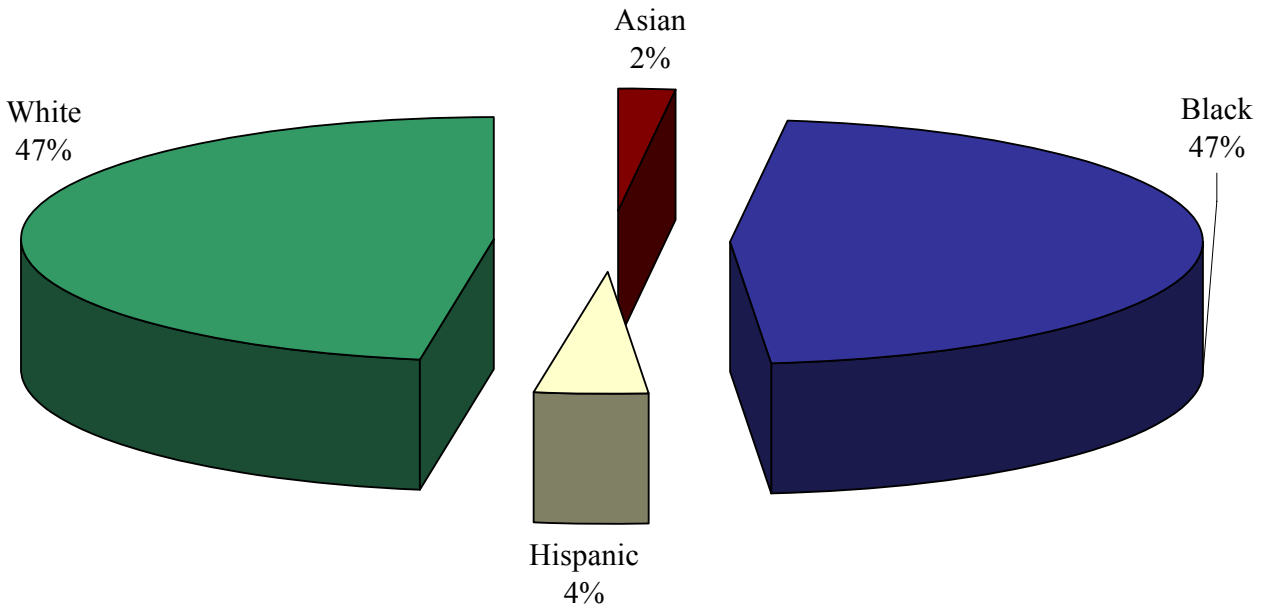


Figure 41. Proportion of Natural Deaths of Children by Race/Ethnicity, 2007



ACCIDENTAL DEATHS OF CHILDREN (N=167)

During 2007, the ratio of male to female accidental deaths averaged 1.3 to 1 for children aged 0 to 17 years.

- More accidental deaths occurred in whites (59.9%), in June (16.2%), and on Fridays (23.4%).
- Being a passenger in an automobile accounted for 32.7 percent of all accidental deaths for children, followed by being the driver of an automobile (16.2%), and drowning (12%).

Figure 42. Accidental Deaths of Children by Gender by Age Group, 2007

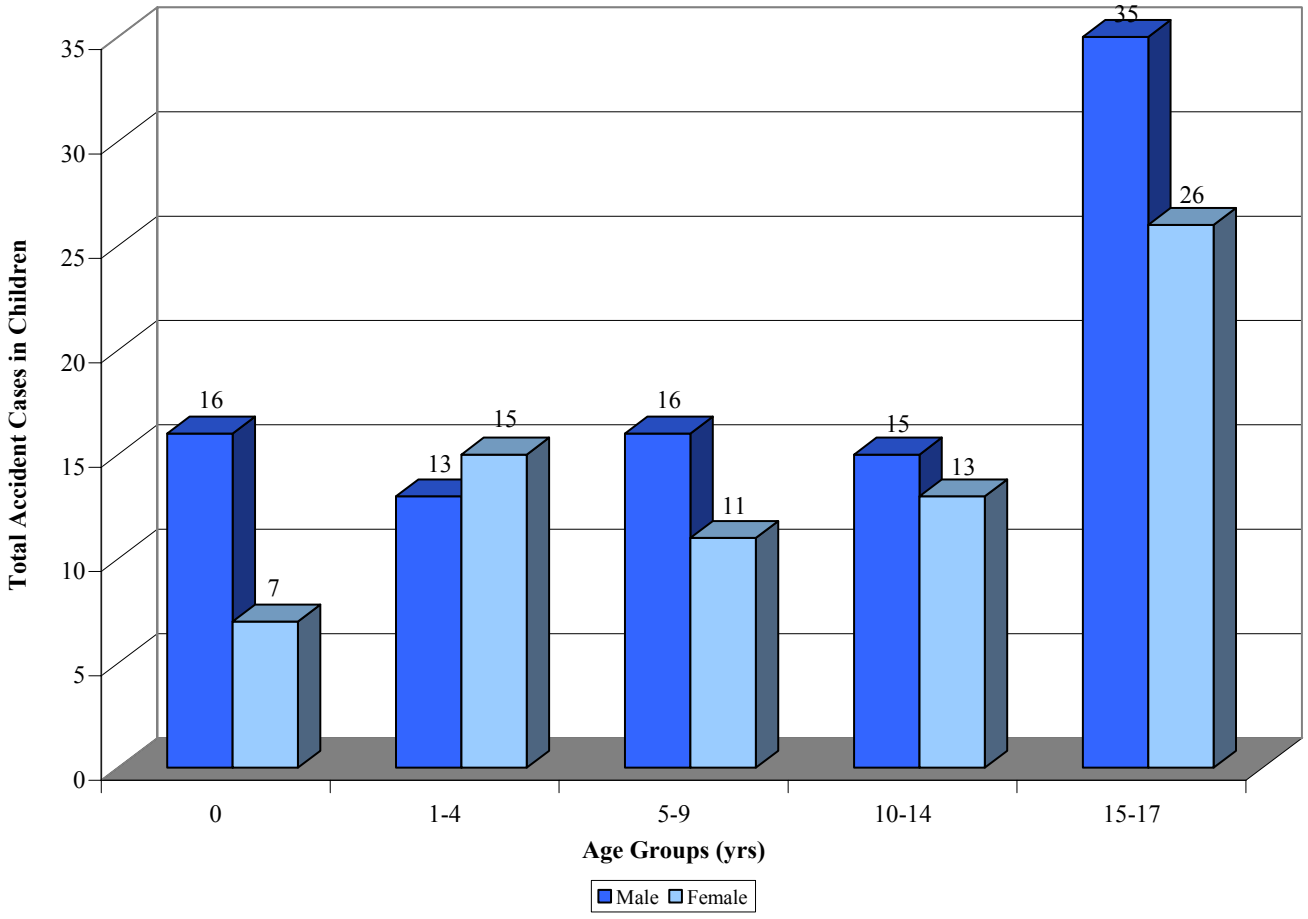
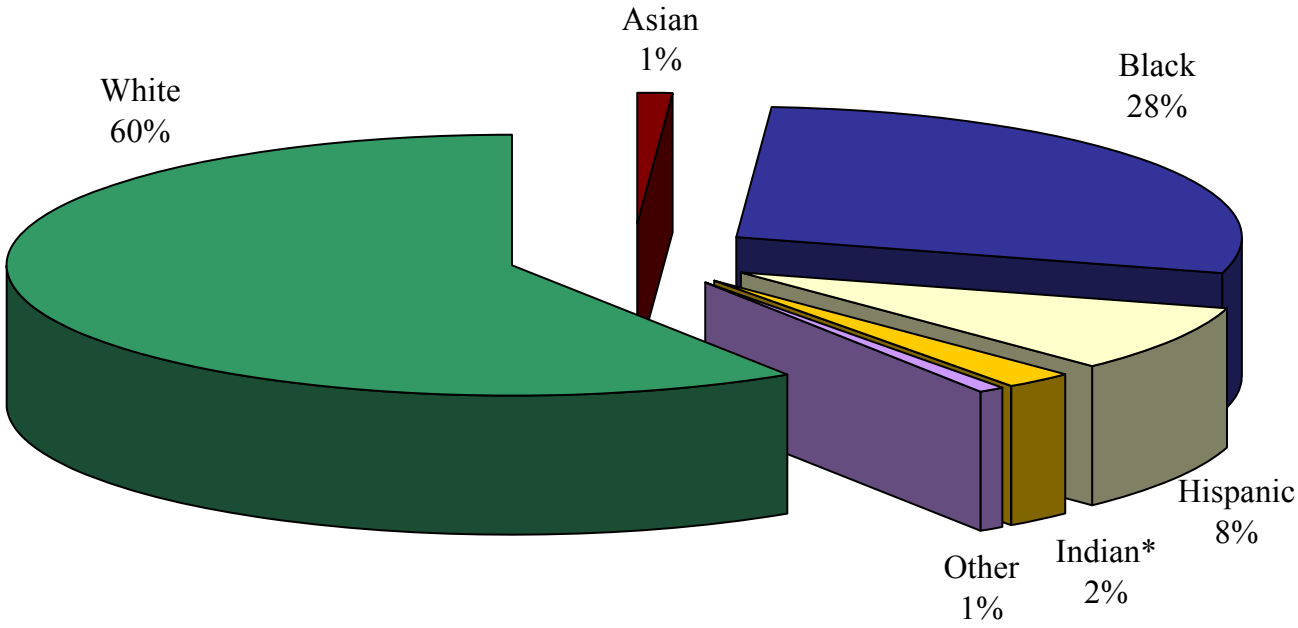


Figure 43. Proportion of Accidental Deaths of Children by Race/Ethnicity, 2007



*Indian refers to subcontinental India

Figure 44. Accidental Deaths of Children by Month of Death, 2007

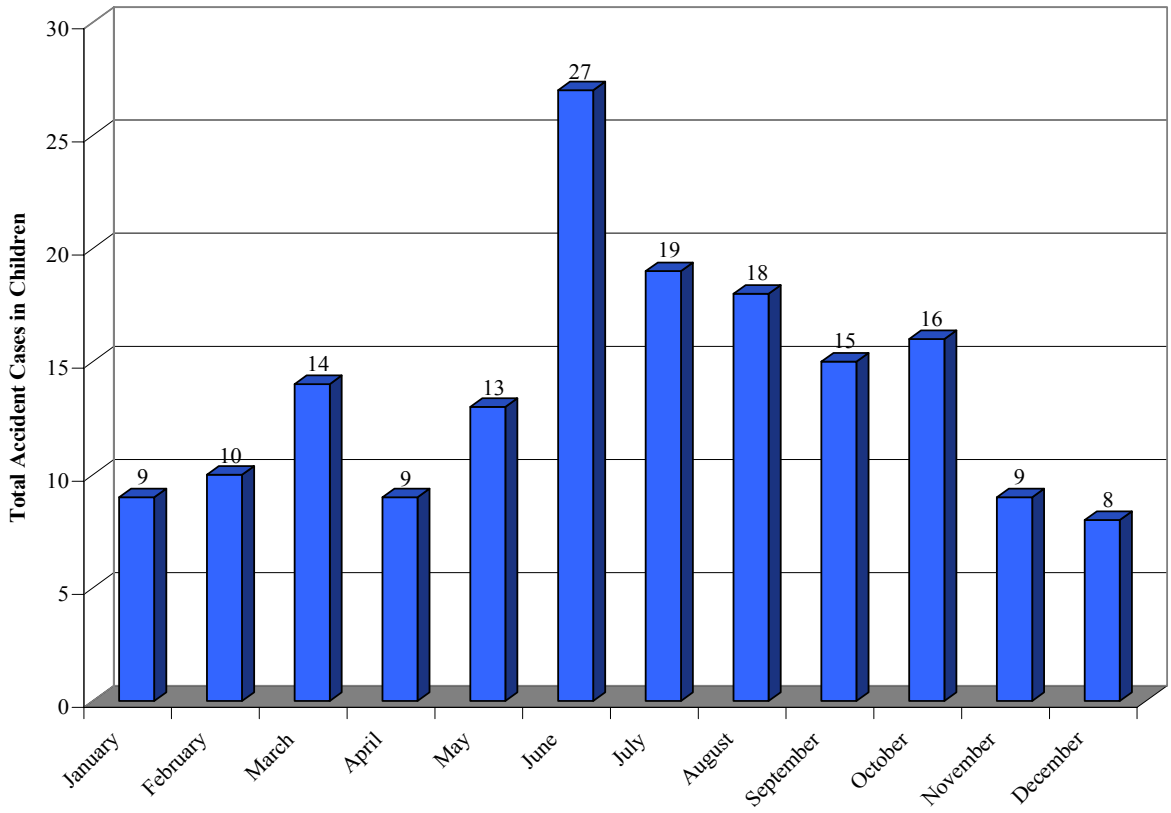


Figure 45. Accidental Deaths of Children by Day of Death, 2007

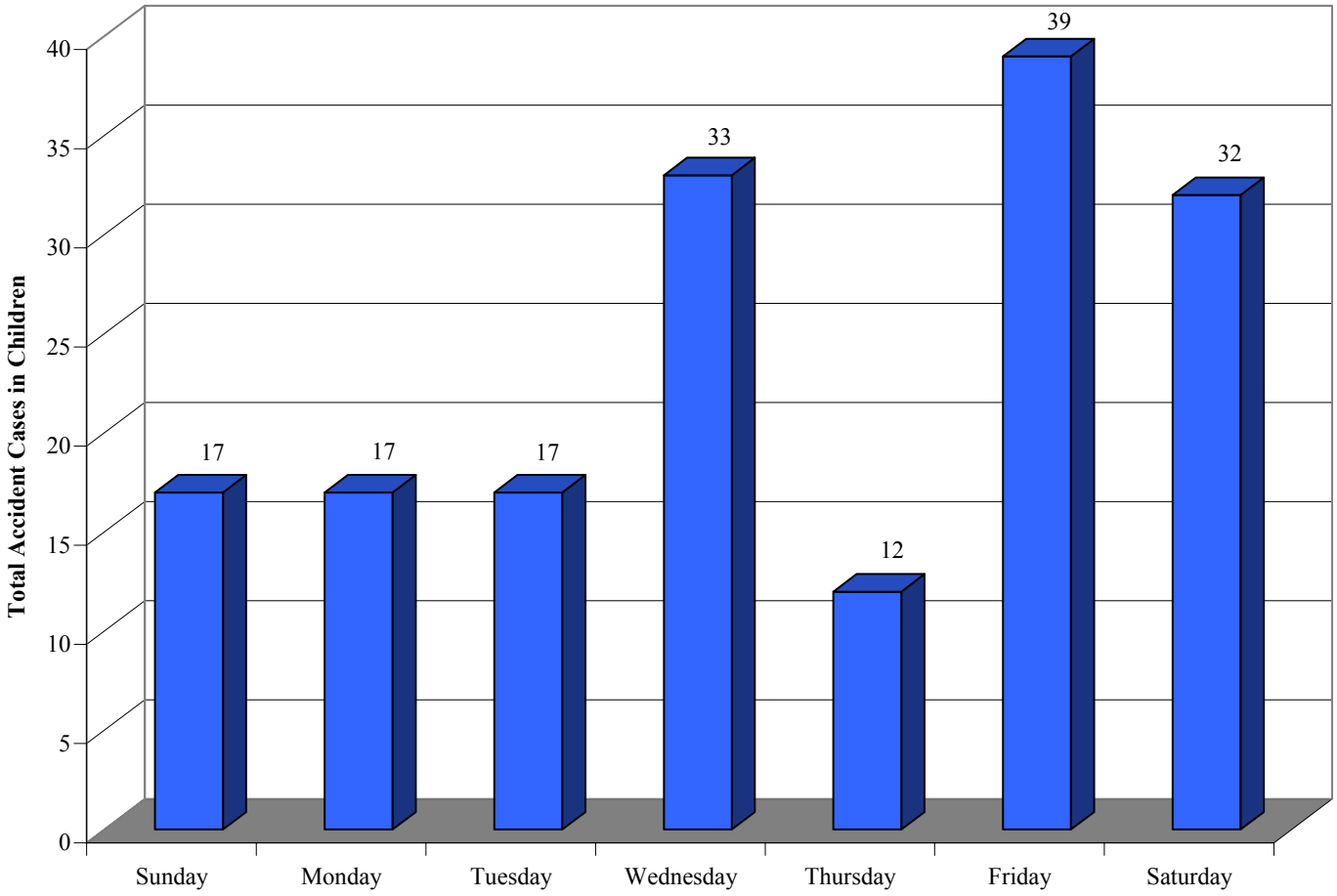


Table 21. Accidental Deaths of Children by Method of Death, 2007

Method of Death		Total Cases	Autopsied
Animal Related			
	Animal related (bitten, stung, kicked)	1	1
Asphyxia			
	Choked on food/foreign object	1	1
	Drowned	20	12
	Hanging	1	1
	Mechanical/Positional	8	8
	Strangulation	1	1
	Suffocated/Smothering	11	9
Drug Use			
	Ingested and/or injected illicit, prescription, and/or OTC medications	5	5
Exposure			
	Exposed to heat	2	2
Fall			
	Fall from height	1	1
Fire			
	Smoke inhalation	7	5
	Victim of fire	10	7
Traumatic Injury			
	Falling object	5	2
	Lightning	1	0
	Received blow/collided with object	2	0
Vehicular			
	ATV	1	0
	Bicycle	1	1
	Car	58	8
	Moped	1	0
	Pickup Truck	10	0
	Sport Utility Vehicle	13	3
	Truck Other	1	0
	Van	6	2
Total		**167**	**69**

SUICIDE DEATHS OF CHILDREN (N=19)

In 2007, the number of suicide deaths of children increased by 1 compared to the previous year.

- Suicide was more common among males (78.9%) and among whites (84.2%).
- The majority of suicides in children were committed using some type of firearm (47.7%) or by hanging (36.8%).

Figure 46. Suicide Deaths of Children by Gender by Age, 2007

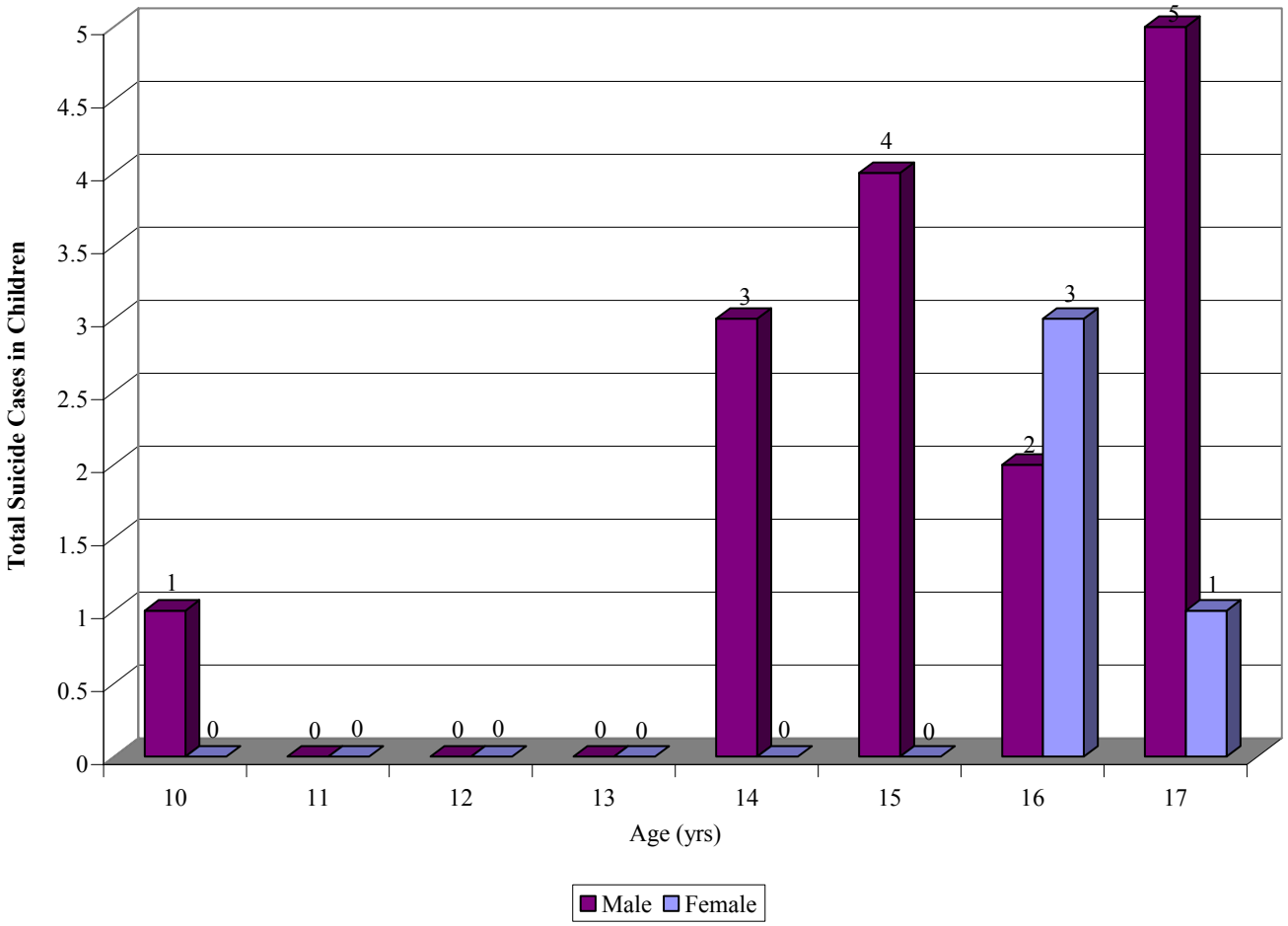


Figure 47. Proportion of Suicide Deaths of Children by Race/Ethnicity, 2007

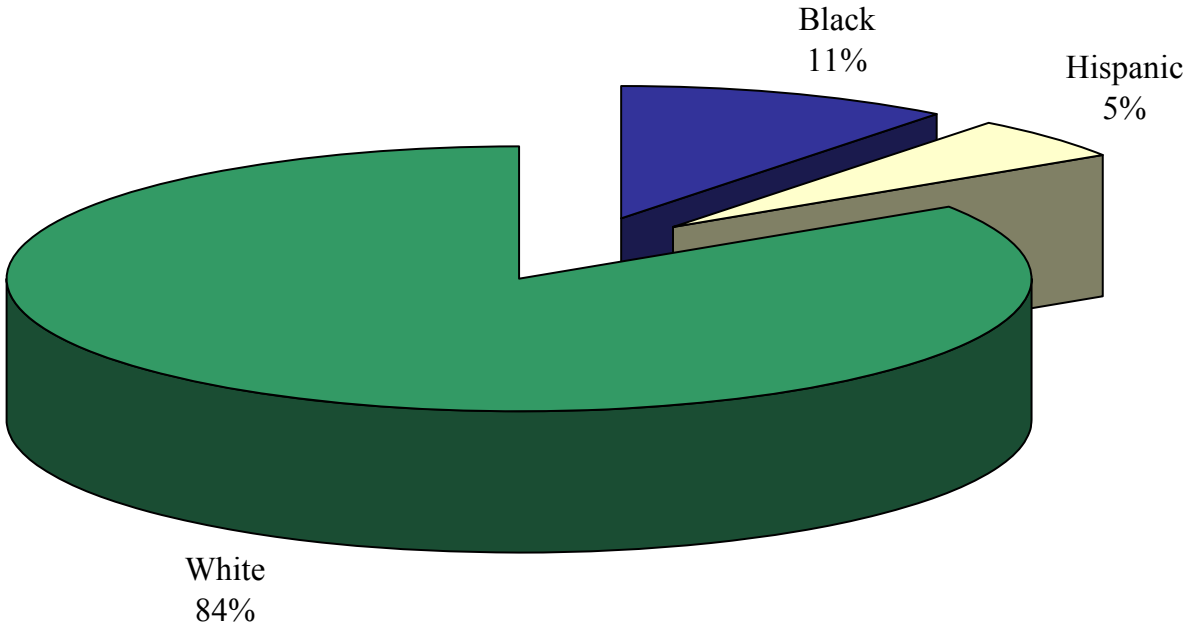


Figure 48. Suicide Deaths of Children by Month of Death, 2007

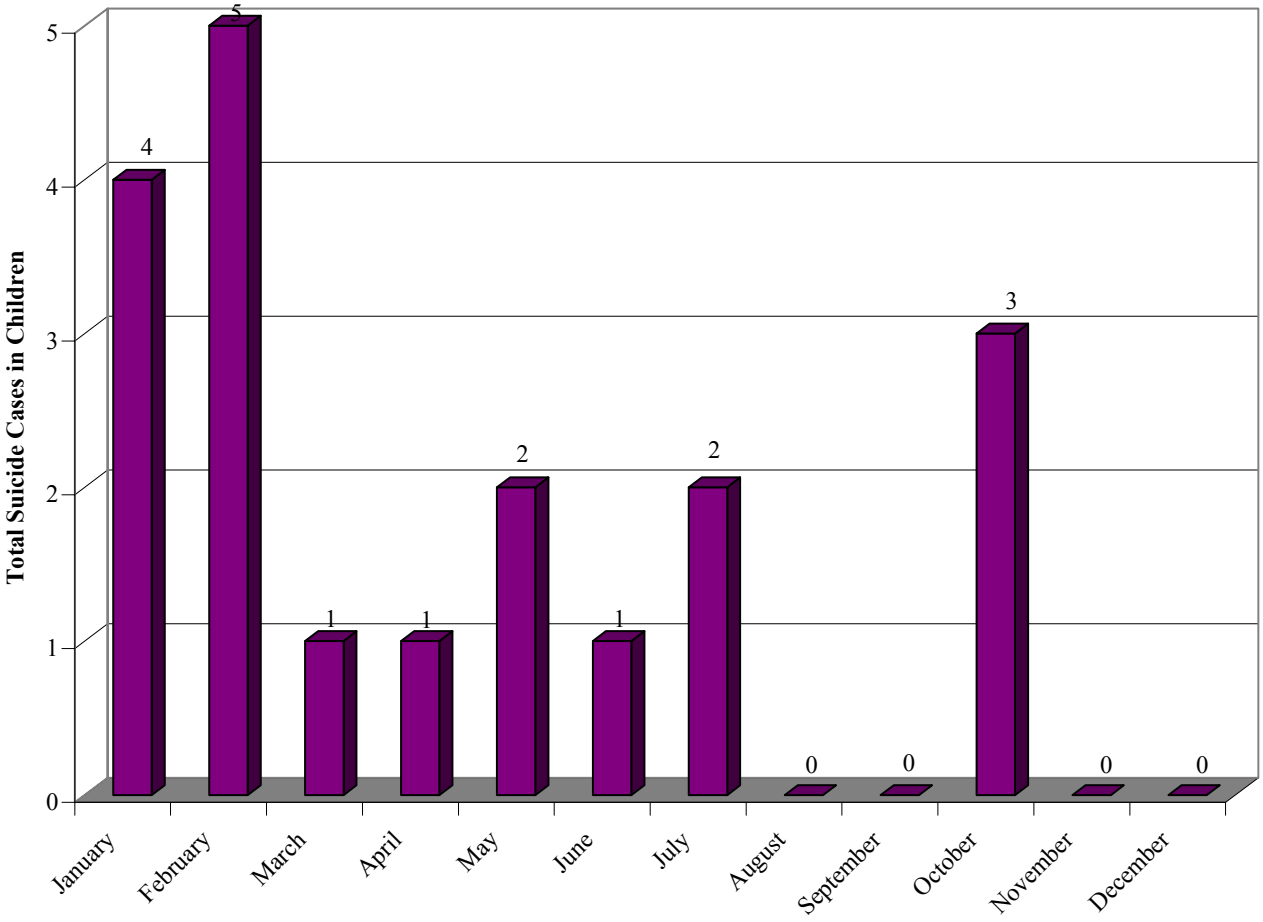


Figure 49. Suicide Deaths of Children by Day of Death, 2007

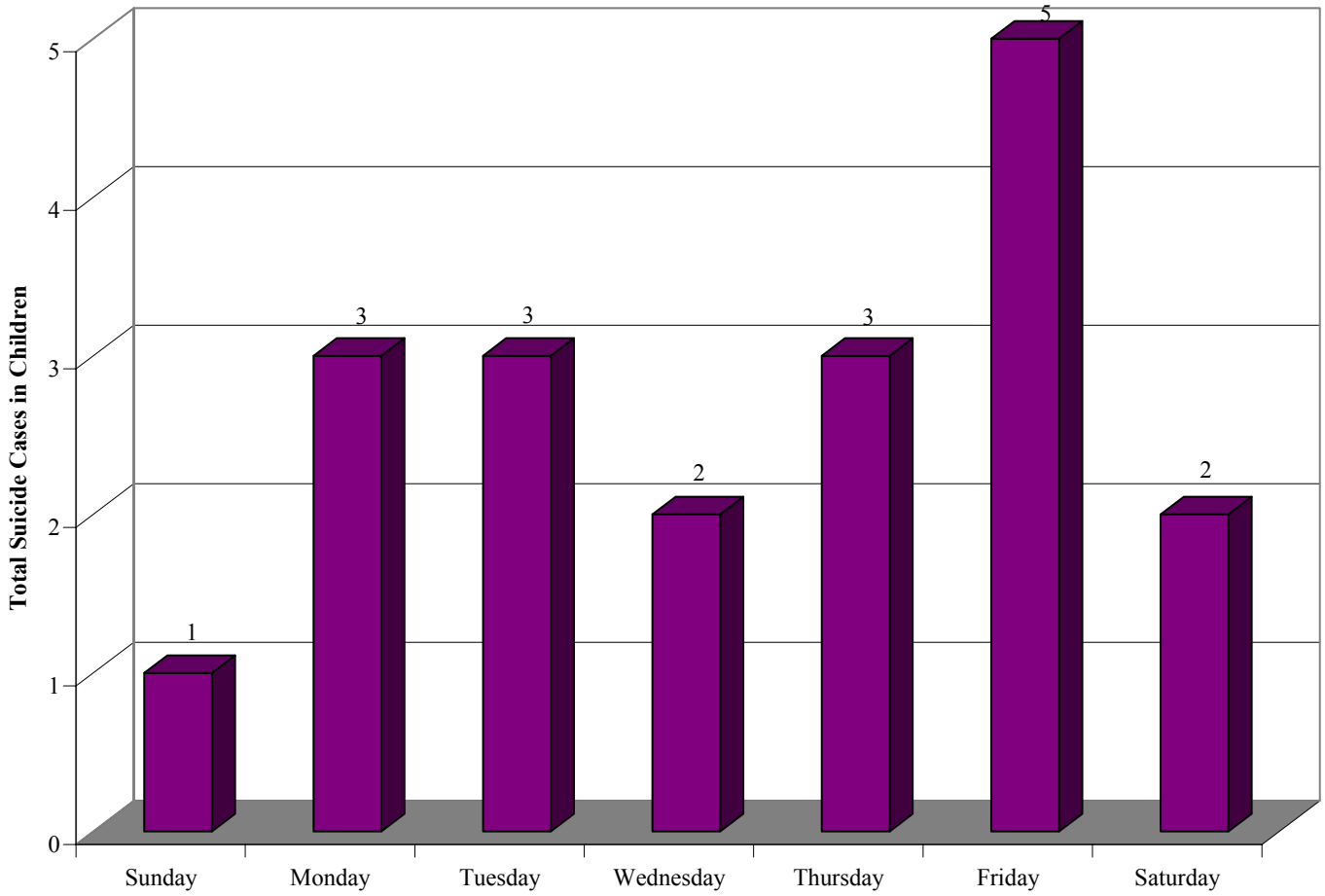
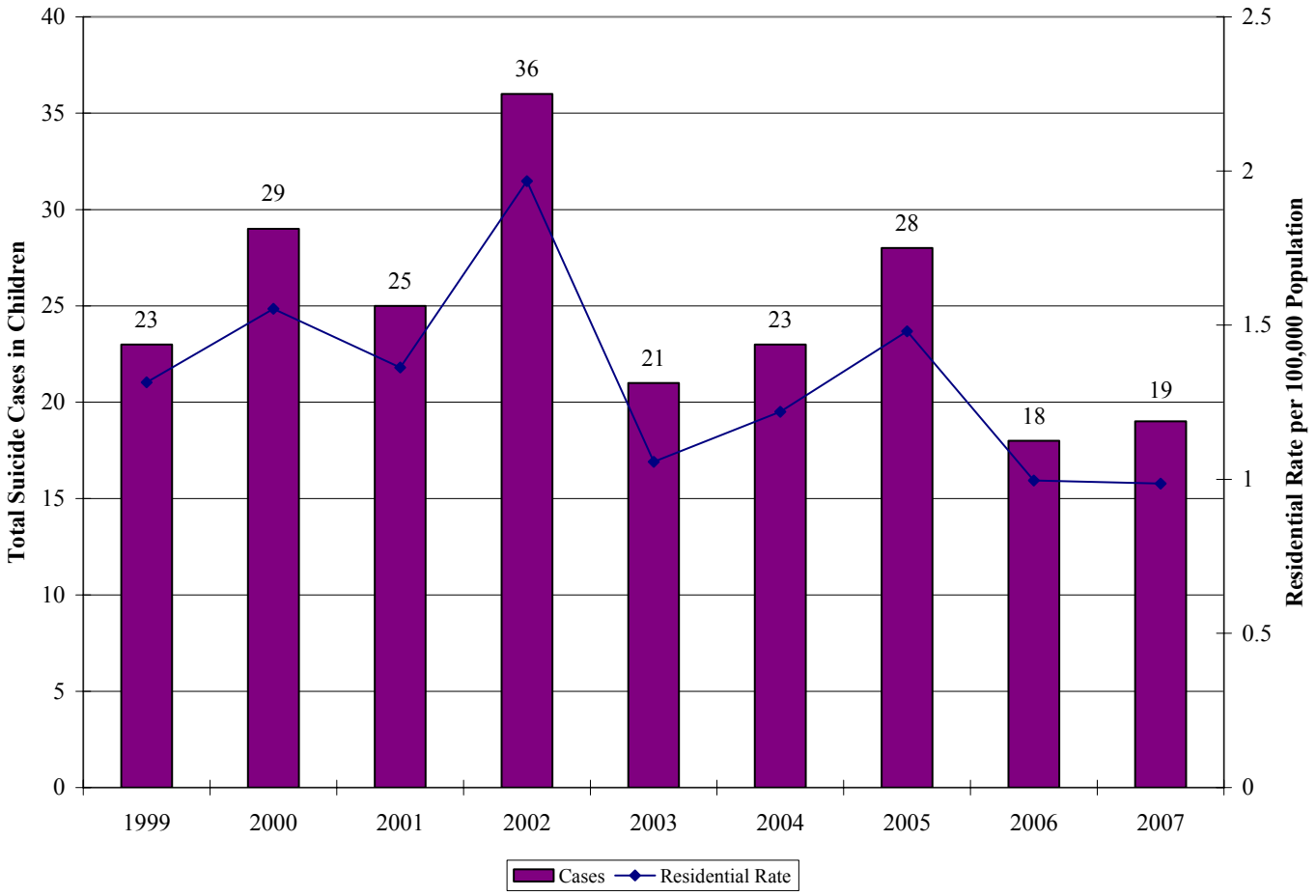


Table 22. Suicide Deaths of Children by Method of Death, 2007

Method of Death	Total Cases	Autopsied
Asphyxia		
Drowned	1	1
Hanging	7	5
Jump		
Jump from height	1	0
Poisoned		
Inhaled toxic agent	1	1
Traumatic Injury		
Gunshot wound	9	9
Handgun	(7)	(7)
Rifle	(2)	(2)
Total	**19**	**16**

Figure 50. Suicide Deaths of Children by Year of Death, 1999*-2007



*The 1999 population data is an estimate from VDH's Division of Health Statistics' data. The 15-17 year olds were contained within the age group for 15-19 year olds; therefore, 60 percent of the 15-19 age group was added to the 0-14 year old age group to estimate the total 1999 children population of 0-17 year olds.

HOMICIDE DEATHS OF CHILDREN (N=43)

During 2007, Virginia experienced a decrease of homicide deaths among children from the previous year. Homicides occurred more frequently in August (18.6%) and on Saturdays (20.9%).

- Males died from homicides at 2.6 times more than females overall.
  - Males slightly exceeded females 1.1 to 1.0 for children age 1-10 years old.
  - Males exceeded females 5.5 to 1.0 for older children age 11-17 years old.
- Blacks accounted for 58.1 percent of homicides in children, representing a rate of 5.6 per 100,000 black children compared to 1.8 per 100,000 Hispanic children and 1.0 per 100,000 in both Asian and white children.
- Firearms were the method of death in 39.1 percent of homicides of children.
- Homicides of children accounted for 9.7% of all homicides in Virginia.

Figure 51. Homicide Deaths of Children by Age by Gender, 2007

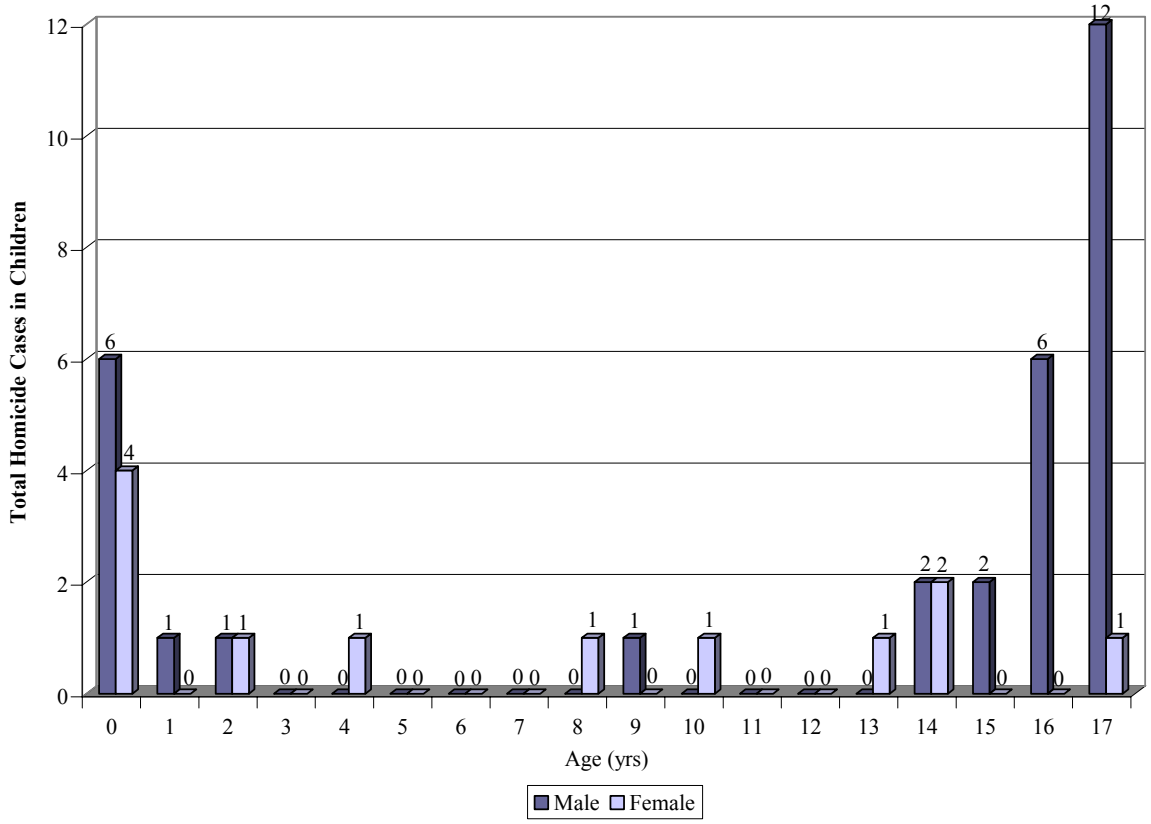


Figure 52. Proportion of Homicide Deaths of Children by Race/Ethnicity, 2007

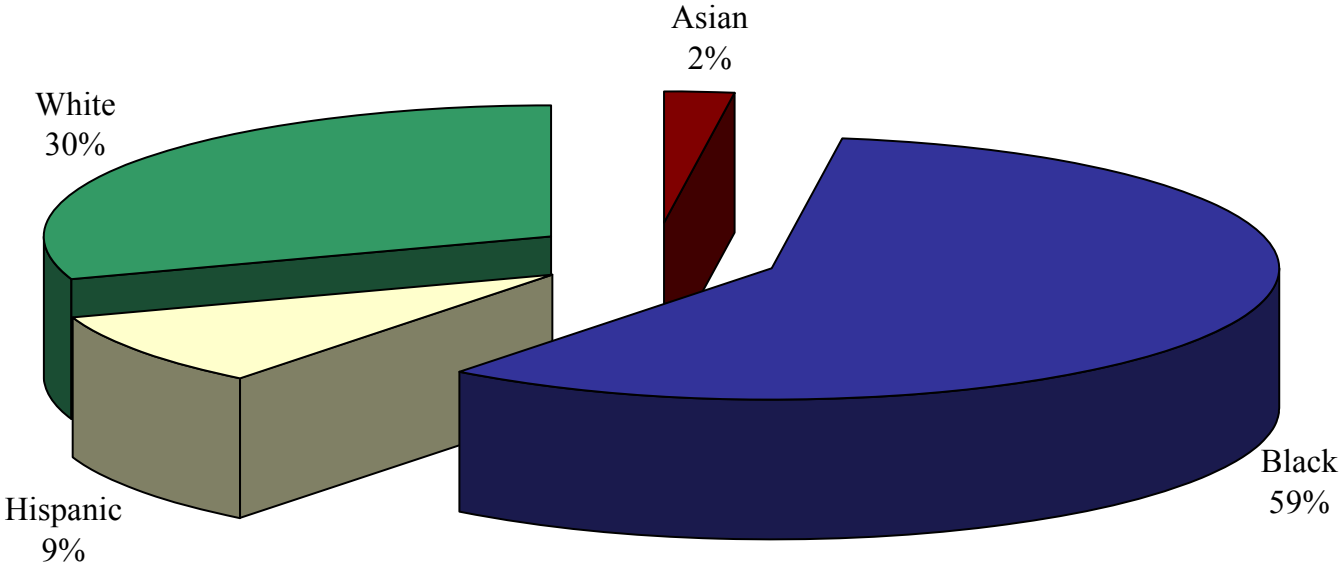


Figure 53. Homicide Deaths of Children by Month of Death, 2007

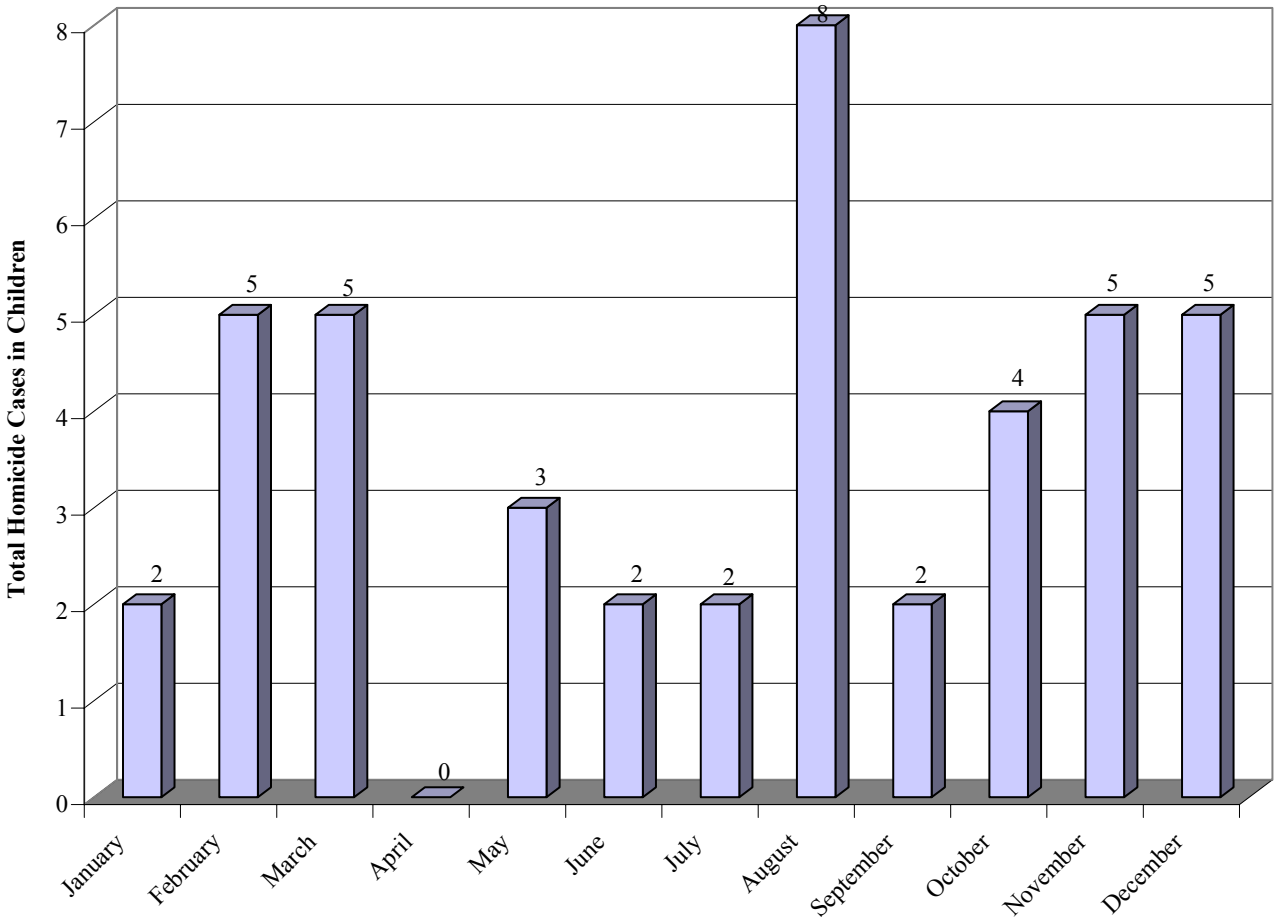


Figure 54. Homicide Deaths of Children by Day of Death, 2007

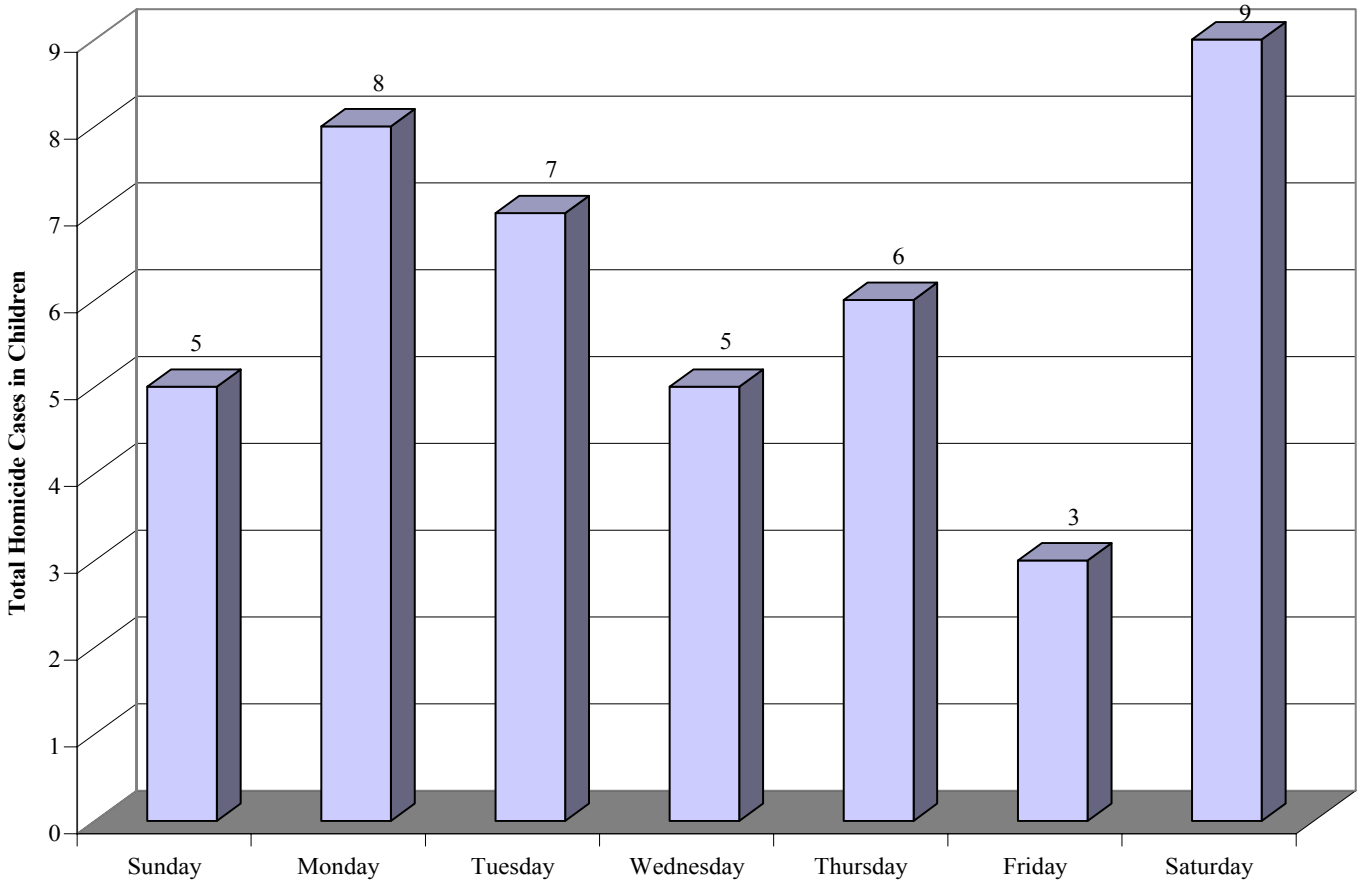
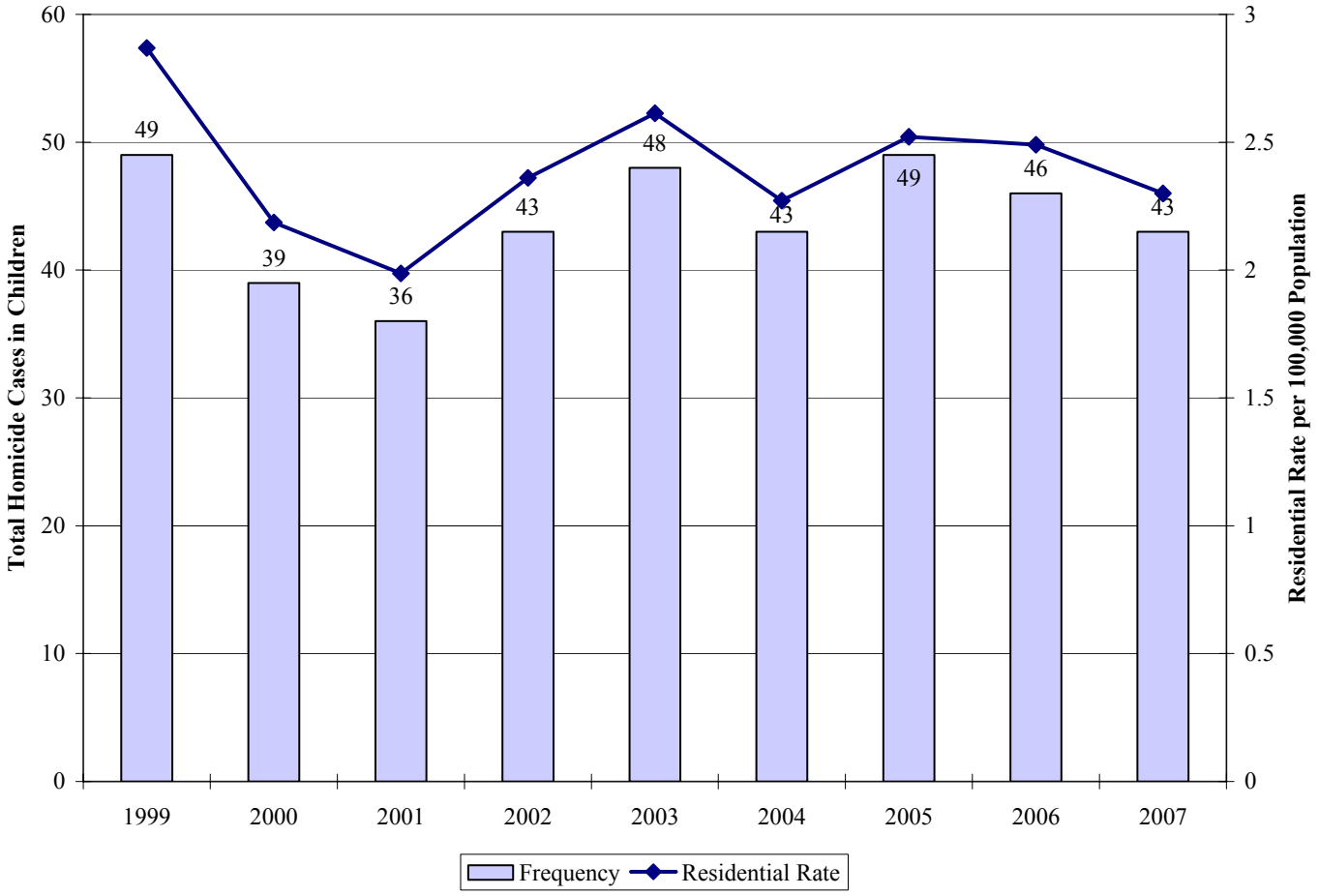


Table 23. Homicide Deaths of Children by Method of Death, 2007

Method of Death	Total Case	Autopsied
Asphyxia		
Drowned	1	1
Fire		
Victim of fire	1	1
Traumatic Injury		
Beaten by assailant(s)	9	9
Poisoned (Ethanol and/or drugs)	2	2
Shot by assailant(s) with firearm	28	28
Handgun	(26)	(26)
Shotgun	(1)	(1)
Unspecified Firearm	(1)	(1)
Traumatic - Other	1	1
Unknown		
Homicide - Other	1	1
Total	**43**	**43**

Figure 55. Homicide Deaths & Rate of Children by Year of Death 1999*-2007



*The 1999 population data is an estimate from VDH's Center for Health Statistics' data. The 15-17 year olds were contained within the age group for 15-19 year old; therefore 60 percent of the 15-19 age group was added into the 0-14 year old age groups to estimate the total 1999 children population of 0-17 year olds.

UNDETERMINED DEATHS OF CHILDREN (N=59)

A total of 59 undetermined deaths of children occurred in 2007. The majority of these undetermined deaths were found in children aged less than 1 year (89.8%).

Figure 56. Undetermined Deaths of Children by Age by Gender, 2007

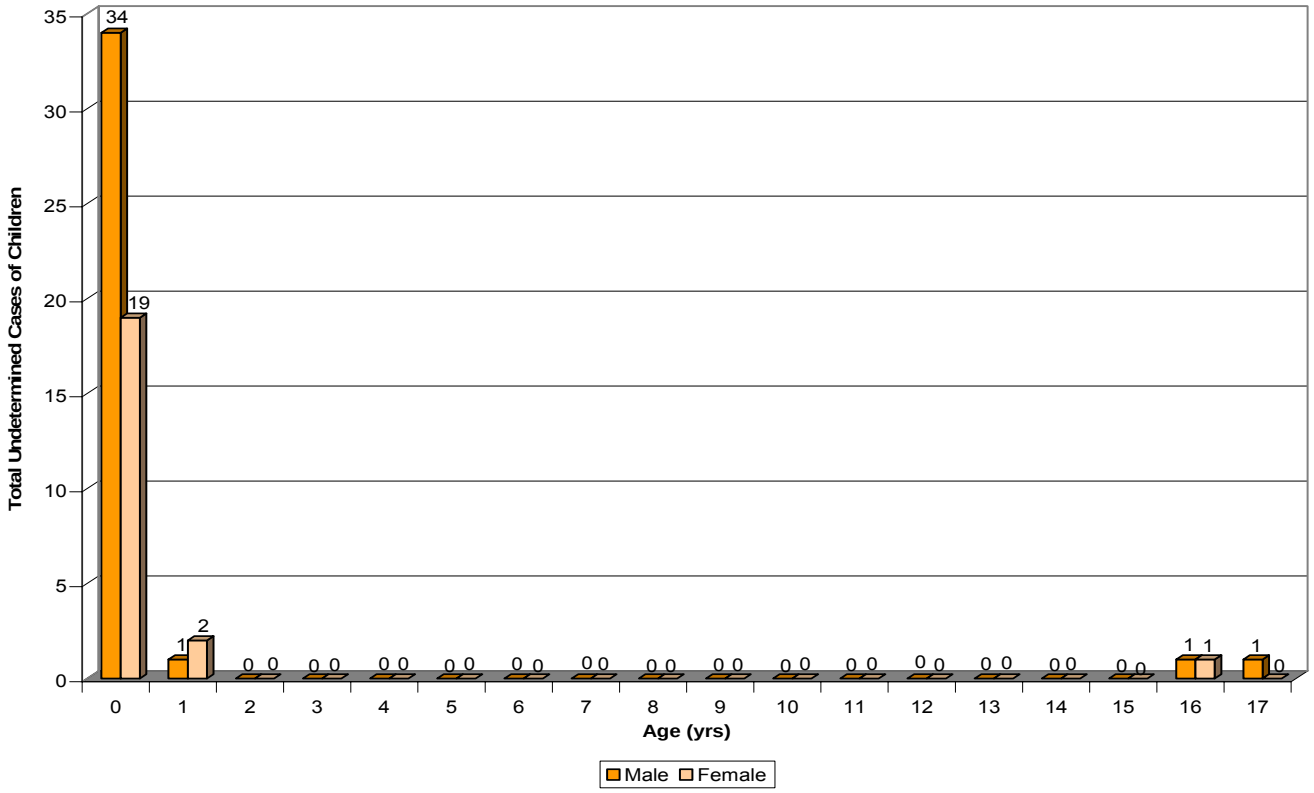


Figure 57. Undetermined Deaths of Children by Race/Ethnicity, 2007

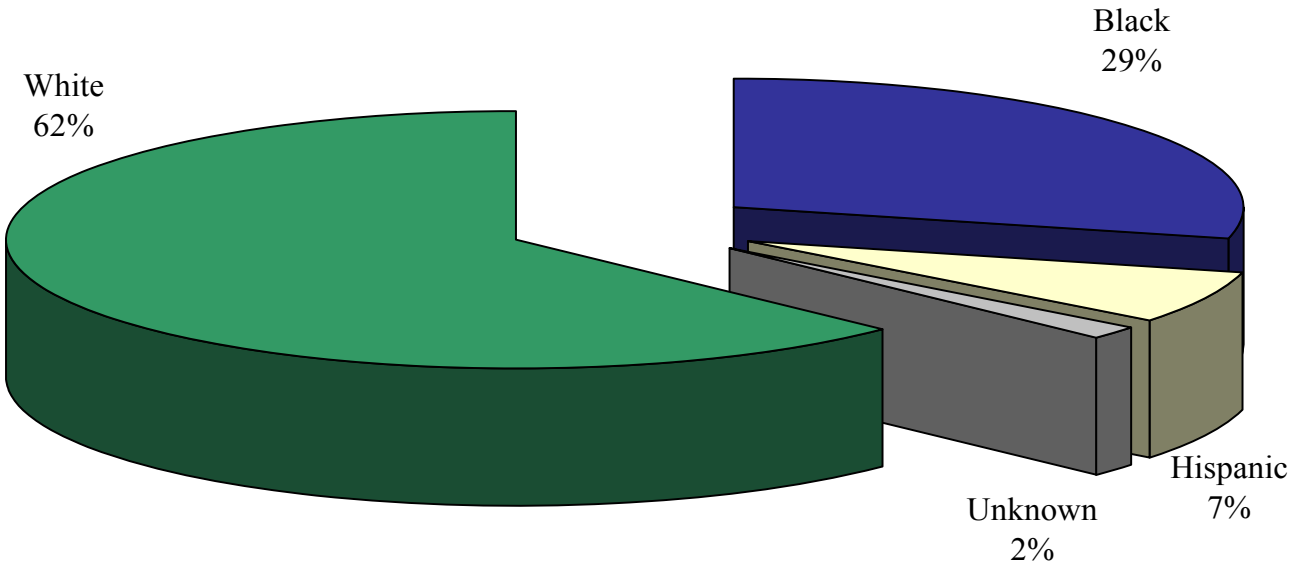


Table 24. Undetermined Deaths of Children by Method of Death & by Age, 2007

Method of Death	Total Cases	Autopsied
Undetermined Manner & Cause of Death		
Sudden Unexpected Infant Death	43	43
Undetermined after autopsy and/or toxicology	13	13
Subtotal for Undetermined Manner & Cause of Death	56	56
Undetermined Manner but Cause of Death Determined		
Asphyxia		
Mechanical/Positional	1	1
Drug Use		
Ingested and/or injected illicit, prescription, and/or OTC medications	1	1
Vehicular		
Airplane	1	1
Subtotal for Undetermined Manner but Cause of Death Determined	3	3
Total	**59**	**59**
Age		
0	53	53
1	3	3
16	2	2
17	1	1
Total	**59**	**59**

SECTION 5: ETHANOL ASSOCIATED DEATHS (N=1290)

Ethanol, at a level of 0.01 percent by weight by volume (W/V) or greater, was detected in the blood of 1290 decedents (21.6%) in 2007. Of those cases with a detectable ethanol level, 62.4 percent had a measured level at or above 0.08 percent W/V, which is the legal limit for operating a motor vehicle in Virginia. Ethanol was detected in 14.7 percent of all natural causes of death, 25.8 percent of all unnatural causes of death, and 1.4 percent of all undetermined causes of death.

- Accidents were responsible for 46.2 percent of all ethanol related deaths.
- Males died from ethanol associated deaths 3.8 times that of females.

Figure 58. Ethanol Associated Deaths by Manner of Death, 2007
Measure Ethanol ≥ 0.01% W/V

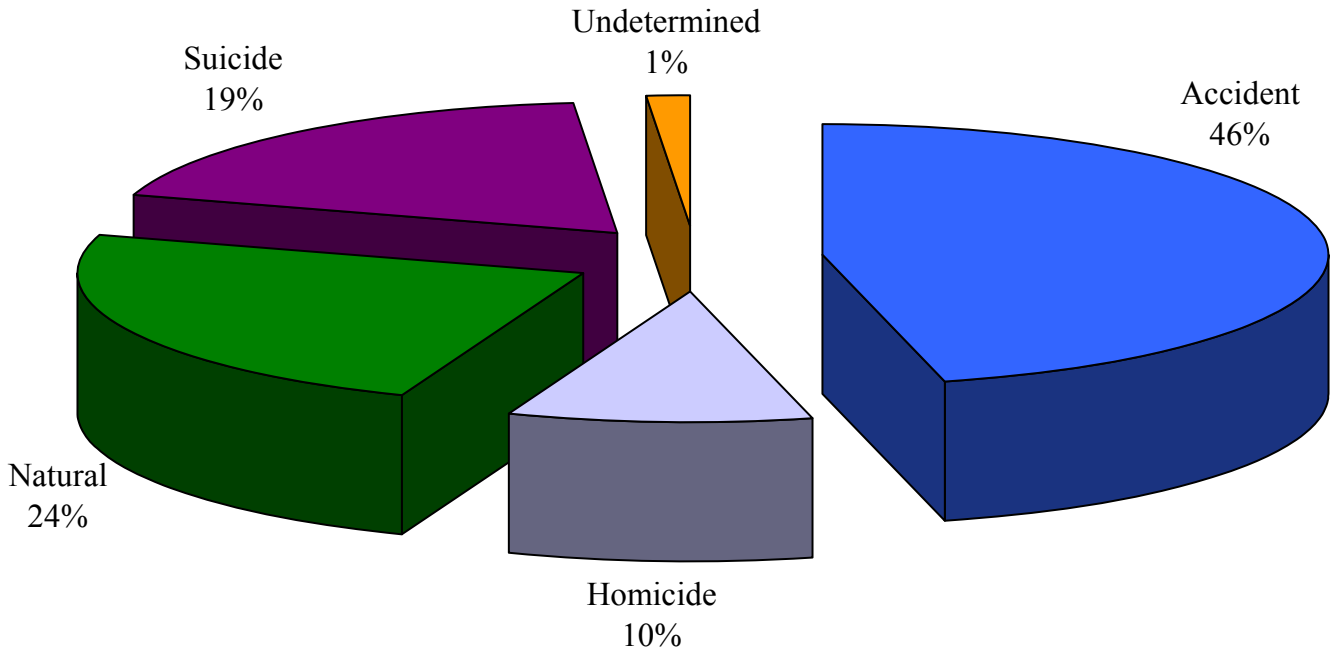


Figure 59. Ethanol Associated Deaths by Age Group by Gender, 2007
Measured Ethanol ≥0.01% W/V

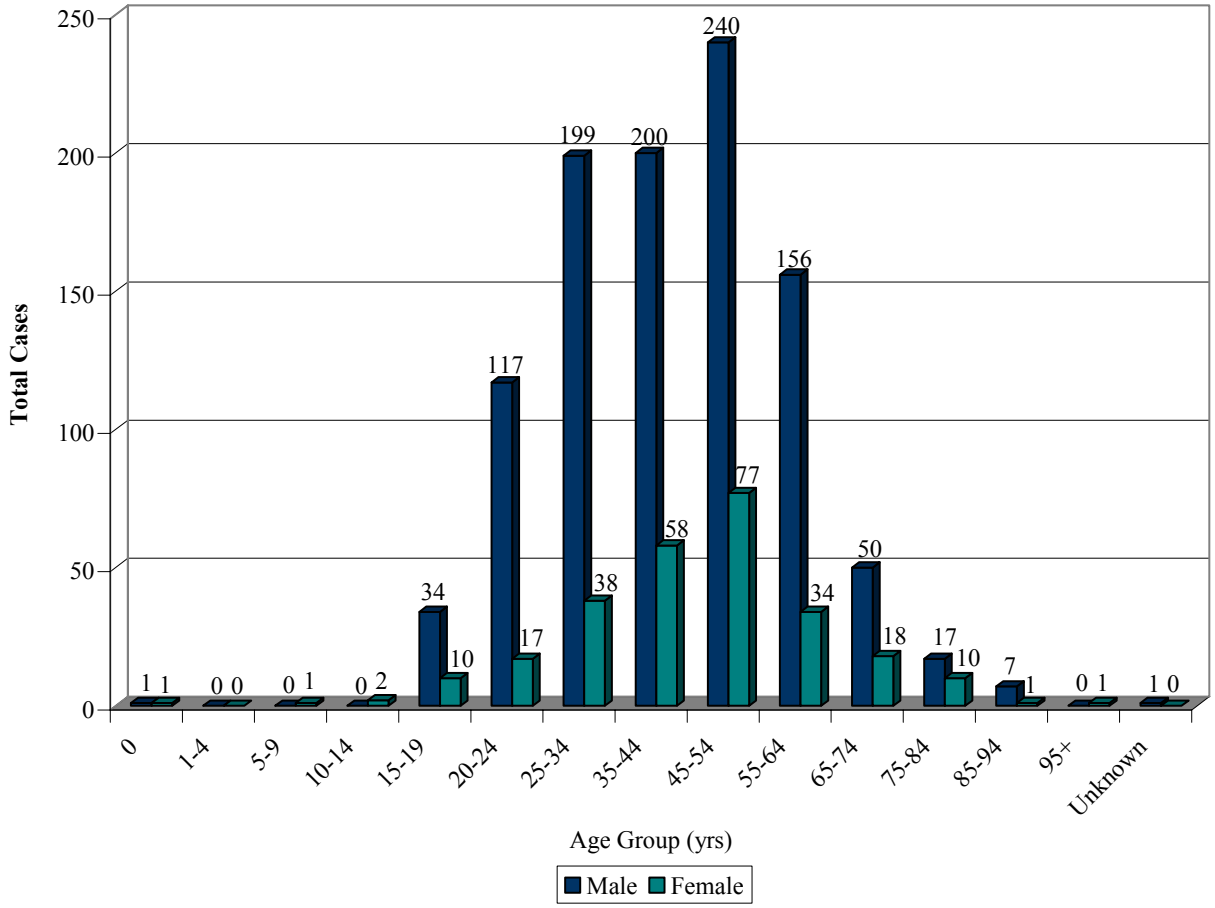
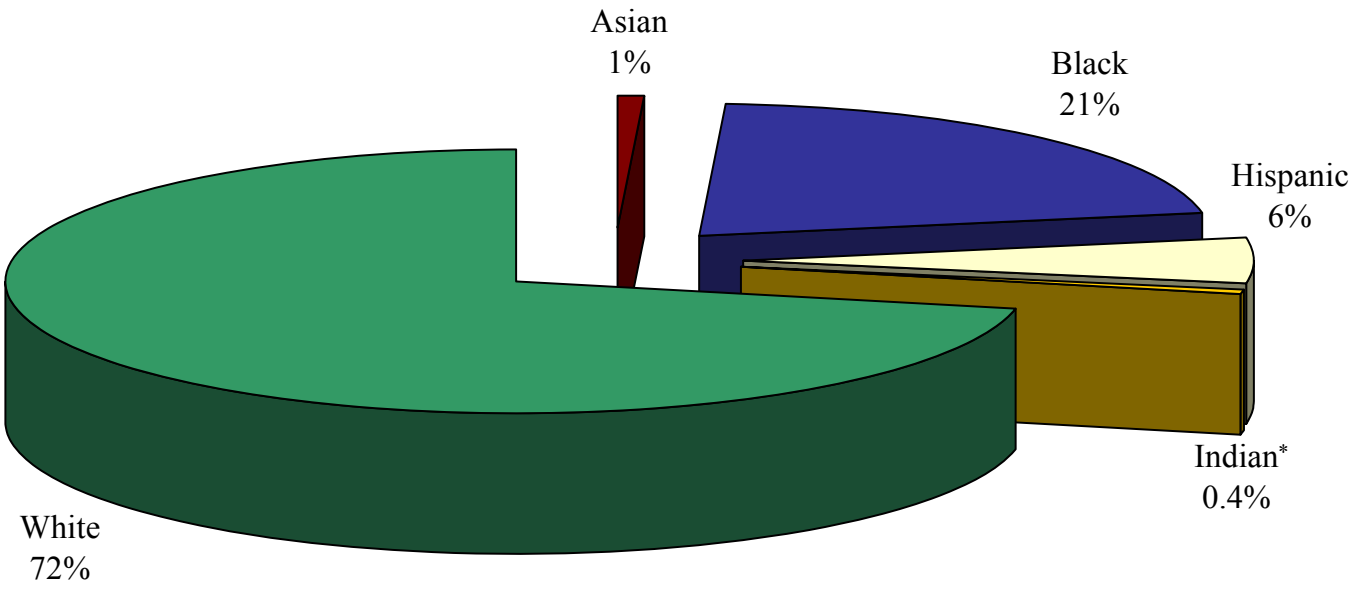
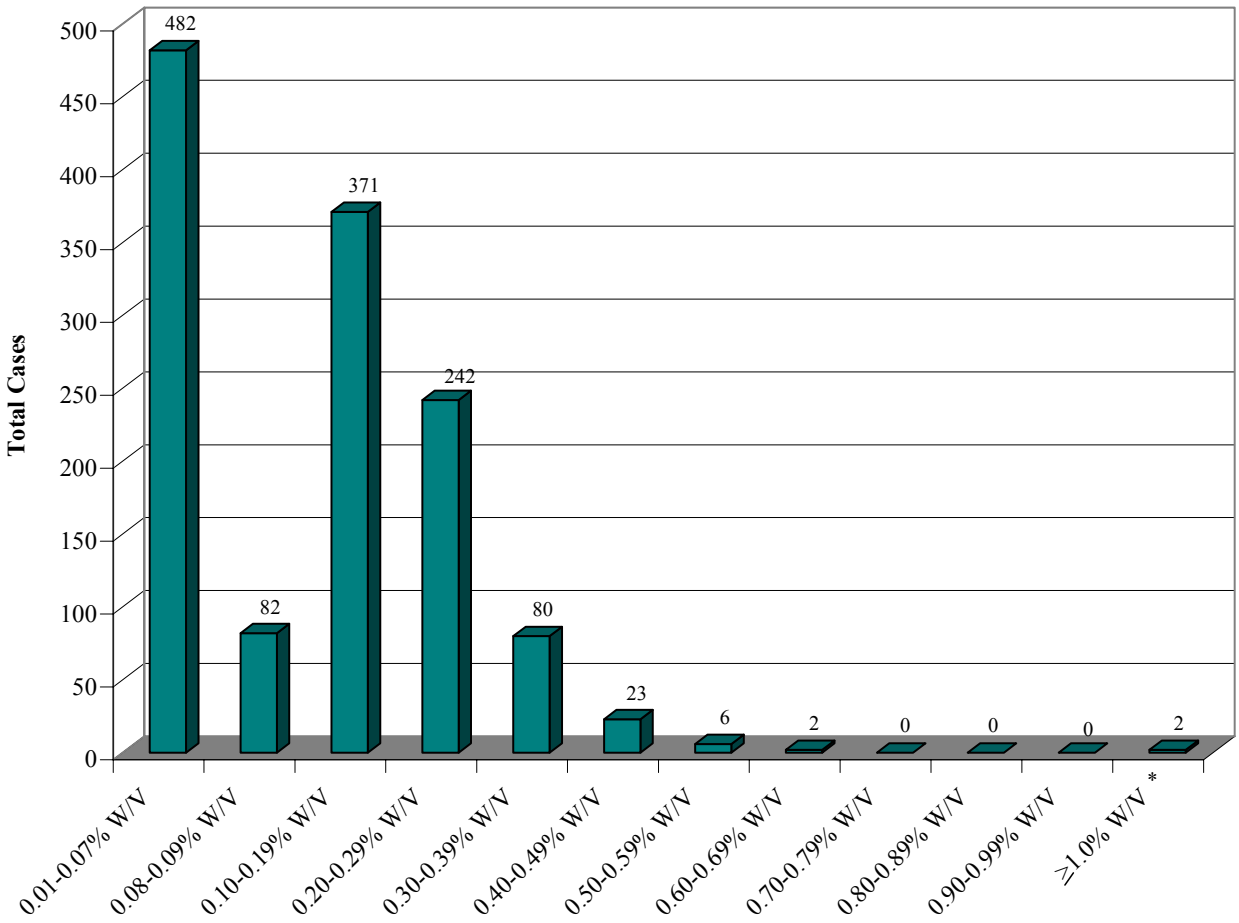


Figure 60. Ethanol Associated Deaths by Race/Ethnicity, 2007
Measured Ethanol ≥0.01% W/V



*Indian refers to subcontinental India

Figure 61. Ethanol Associated Deaths by Measured Ethanol Level, 2007



*Ethanol concentrations of ≥1.0% W/V is incompatible with life and is due to contamination of the toxicology sample with gastric contents.

Table 25. Ethanol Presence in Natural and Unnatural Deaths by Cause of Death, 2007

		Ethanol ≥0.01	
Natural Deaths	**Total Cases**	**Yes**	**No**
Pulmonary Diseases/Disorders	**205**	**10**	**195**
Asthma	19	0	19
COPD	37	4	33
Emboli	43	3	40
Pneumonia	72	1	71
Pulmonary Malignancy	29	0	29
Other Pulmonary Disease/Disorder	5	2	3
Central Nervous System Diseases/Disorders	**98**	**7**	**91**
Seizure Disorder	32	5	27
Vascular Disease	47	1	46

continued

Degenerative Disease	12	1	11
Meningitis (Bacterial or Viral)	2	0	2
CNS Malignancy	3	0	3
Other CNS Disease/Disorder	2	0	2
Cardiovascular Diseases/Disorders	**1358**	**201**	**1157**
Atherosclerosis	804	110	694
Hypertension	186	22	164
Atherosclerosis & Hypertension	121	21	100
Congenital Defect	3	0	3
Vascular Dissection/Ruptures	10	3	7
Valvular	10	3	7
Acute Coronary Insufficiency	154	30	124
Other Cardiac Disease/Disorder	70	12	58
Gastrointestinal Diseases/Disorders	**206**	**78**	**128**
GI Hemorrhage	27	10	17
Cirrhosis	12	3	9
Chronic Ethanolism	123	61	62
Hepatitis	3	0	3
GI Malignancy	21	0	21
Other GI Disease/Disorder	20	4	16
Genitourinal Diseases/Disorders	**23**	**1**	**22**
Renal Disease	10	0	10
Genitourinal Malignancy	8	0	8
Other GU Disease/Disorder	5	1	4
Perinatal and Pediatric Diseases/Disorders	**51**	**1**	**50**
Maternal Complications	1	0	1
Fetal Complications	9	0	9
Sudden Infant Death Syndrome	41	1	40
Systemic Diseases/Disorders	**112**	**7**	**105**
Blood Disorders	8	0	8
Diabetes	36	4	32
AIDS/HIV	19	1	18
Sepsis	16	1	15
Other Infectious Disease	14	1	13
Metastatic Malignancy Unknown Primary	7	0	7
Other Systemic Disease/Disorder	12	0	12
Other Natural Diseases/Disorders	**41**	**3**	**38**
Other Malignancy	13	1	12
Other Natural Disease/Disorder	28	2	26
Natural Subtotal	**2094**	**308**	**1786**

continued

Unnatural Deaths	Total Cases	Ethanol ≥0.01 Yes	No
Asphyxia	**360**	**100**	**260**
Choking (Aspiration: Food or Foreign Object)	22	4	18
Drowning	90	29	61
Hanging	172	53	119
Mechanical	35	6	29
Positional	6	1	5
Strangulation/Neck Compression	8	3	5
Suffocation/Smothering	20	3	17
Oxygen Replacement/Displacement	6	1	5
Other Asphyxia	1	0	1
Electrocution	**11**	**0**	**11**
High Voltage	5	0	5
Low Voltage	6	0	6
Exposure	**25**	**7**	**18**
Hyperthermia	6	0	6
Hypothermia	19	7	12
Fire Injuries	**124**	**31**	**93**
Thermal Burns	22	4	18
Inhalation of Combustion Products	51	13	38
Thermal Burns & Inhalation of Combustions Products	51	14	37
Gunshot Wound	**837**	**207**	**630**
Handgun	677	170	507
Rifle	54	11	43
Shotgun	84	18	66
Unknown Gun	22	8	14
Blunt Force Injuries	**1605**	**367**	**1238**
Head/Neck	766	169	597
Chest	125	27	98
Abdomen	27	6	21
Trunk	80	19	61
Extremities	111	7	104
Multiple	496	139	357
Penetrating Injuries	**72**	**25**	**47**
Incised	17	5	12
Stab	51	19	32
Other Penetrating Injuries	4	1	3
Substance Abuse	**754**	**242**	**512**
Ethanol Poisoning	20	20	0
Prescription Drug Poisoning	388	100	288

continued

Illegal (Street) Drug Poisoning	153	59	94
CO Poisoning (Excludes Fires)	33	15	18
Mixed Category Drug Poisoning	114	38	76
Inhalant Poisoning	7	3	4
OTC Poisoning	17	4	13
Ethylene Glycol Poisoning	5	1	4
Not Otherwise Specified Poisoning	13	2	11
Other Poisons (Heavy Metals, etc.)	4	0	4
Other Unnatural Deaths	**14**	**2**	**12**
Other Unnatural	14	2	12
Unnatural Subtotal	**3802**	**981**	**2821**

		Ethanol ≥0.01	
Undetermined Deaths	**Total Cases**	**Yes**	**No**
Undetermined After Autopsy and/or Investigation	**72**	**1**	**71**
Sudden Unexpected Infant Death (SUID)	43	0	43
Skeletal/Mummified Remains	3	0	3
Other Undetermined	26	1	25
Undetermined Subtotal	**72**	**1**	**71**
TOTAL	**5968**	**1289**	**4679**

ETHANOL ASSOCIATED ACCIDENTAL DEATHS (N=596)

Ethanol was detected in 32.9 percent of all accidental deaths in 2007; this was an increase from the previous year.

- Vehicular related accidental deaths had detectable levels of ethanol in 29.4 percent of these cases.
- Drug related accidental deaths had detectable levels of ethanol in 33 percent of these cases.
- Accidental falls had detectable levels of ethanol in 6.3 percent of these cases.

Figure 62. Accidental Deaths by Age Group by Ethanol Level, 2007

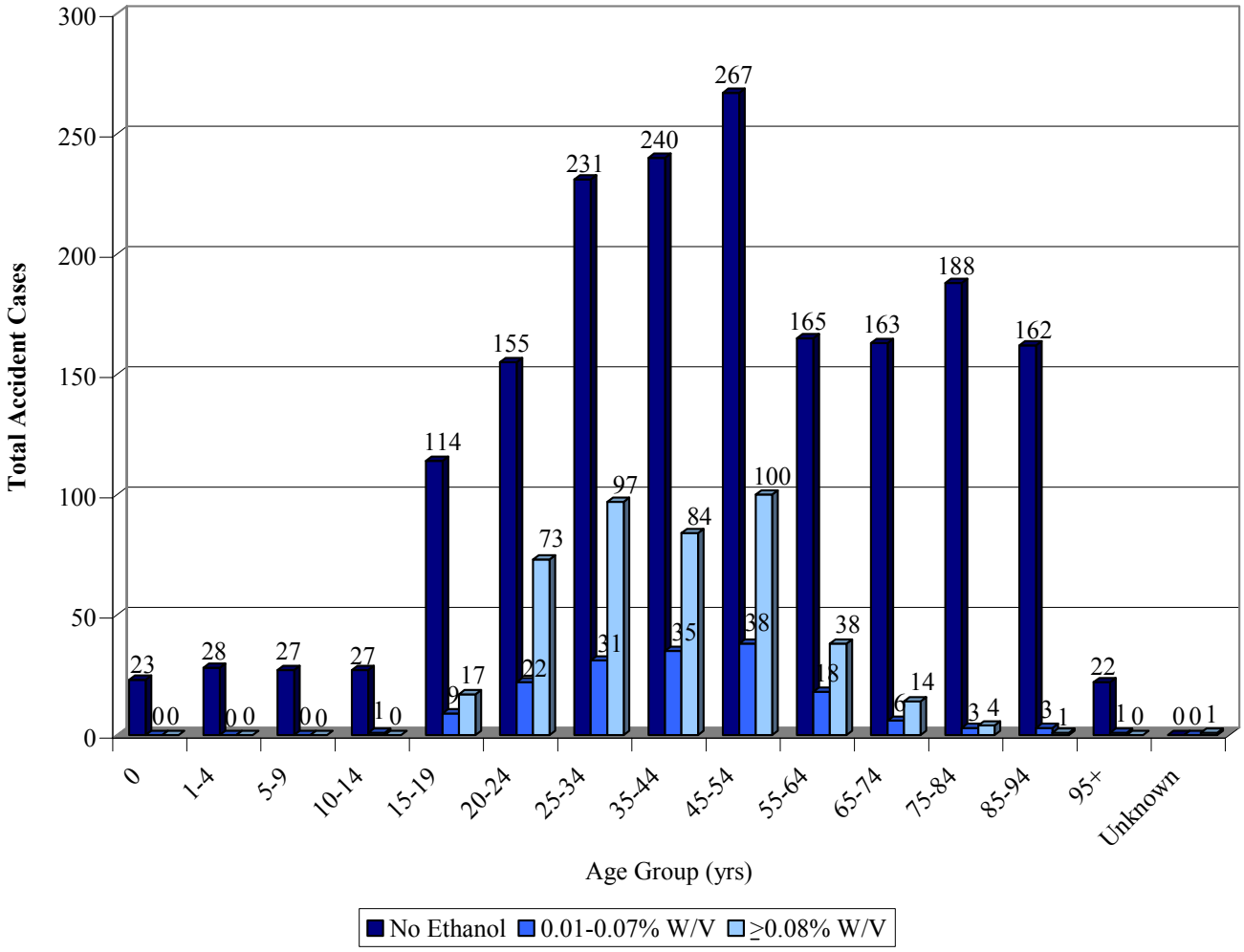


Table 26. Accidental Deaths by Method of Death by Presence of Ethanol, 2007

Method of Death	Total Cases	Ethanol ≥0.01% W/V Yes	No
Animal Related			
Animal related (bitten, stung, kicked)	1	0	1
Asphyxia			
Choked on food/foreign object	19	4	15
Drowned	75	22	53
Hanging	3	0	3
Mechanical/Positional	30	4	26
Strangled	4	0	4
Suffocation/Smothering	17	0	17
Drug Use			
Ingested ethanol or other alcohol	20	20	0
Ingested and/or infected illicit, prescription, and/or OTC medications	522	159	363
Electrical			
Contacted electrical current	10	0	10
Exposure			
Exposed to cold	18	7	11
Exposed to heat	7	0	7
Fall			
Fall from all heights	396	25	371
Fire			
Smoke inhalation	42	11	31
Victim of explosion	5	0	5
Victim of fire/burns	52	11	41
Machinery			
Farm or industrial machinery accident	8	1	7
Motor Vehicle			
Aircraft	7	0	7
All Terrain Vehicle	19	6	13
Bicycle	8	3	5
Boat	3	0	3
Bus	5	1	4
Car	561	173	388
Lawnmower	1	0	1
Moped	8	3	5
Motorcycle	137	41	96
Multiple	2	0	2

continued

Method of Death	Total Cases	Ethanol ≥0.01% W/V Yes	No
Pickup Truck	124	39	85
Sport Utility Vehicle	132	41	91
Tractor Trailer	18	2	16
Train	2	2	0
Truck Other	21	3	18
Unknown	22	3	19
Van	33	7	26
Poisoned			
Inhaled toxic agent (Carbon Monoxide)	5	0	5
Other (Eg. Ethylene Glycol)	4	1	3
Traumatic Injury			
Accidental discharge of firearm	7	0	7
Handgun	(3)	(0)	(3)
Rifle	(2)	(0)	(2)
Shotgun	(2)	(0)	(2)
Accidental cut injury	3	0	3
Falling object	23	0	23
Jump	5	1	4
Lightning	1	0	1
Received blow/collided with object	11	2	9
Other traumatic causes	11	3	8
Unknown			
Accidental - Unknown	2	1	1
TOTAL	**2404**	**596**	**1808**

ETHANOL ASSOCIATED SUICIDE DEATHS (N=242)

Ethanol was detected in 242 or 26.7 percent of all suicides. Of the 242 suicides with ethanol present, the most frequent method of suicide was to shoot oneself with a firearm (48.4%) followed by hanging (21.5%).

Figure 63. Suicide Deaths by Age Group by Ethanol Level, 2007

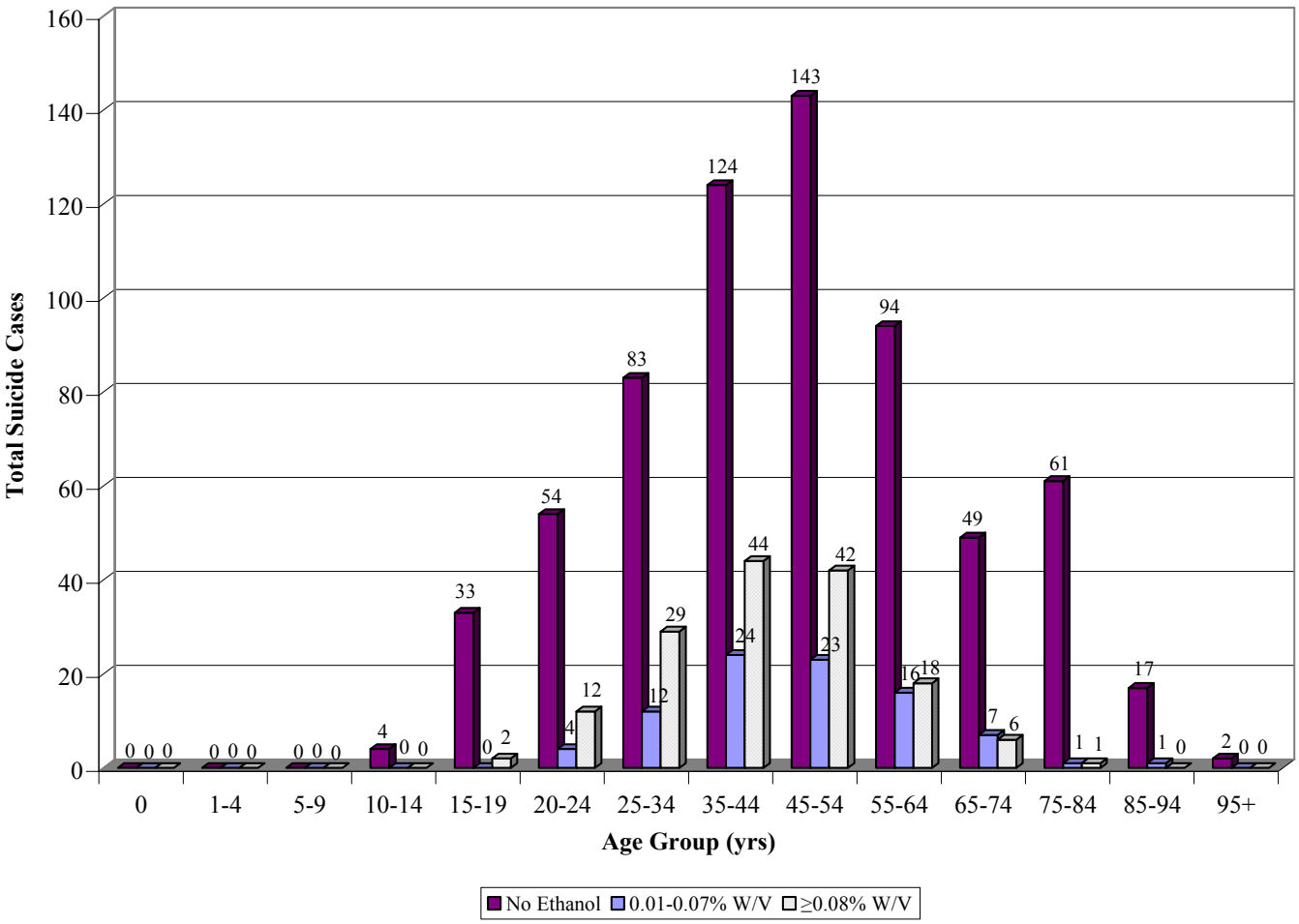


Table 27. Suicide Deaths by Alcohol Presence by Method of Death, 2007

Method of Death	Total Cases	Ethanol ≥0.01% W/V Yes	Ethanol ≥0.01% W/V No
Asphyxia			
Drowned	10	3	7
Hanging	167	52	115
Helium	2	0	2
Plastic bag	6	1	5
Suffocation/Smothering	1	1	0
Drug Use			
Ingested and/or injected illicit, prescription, and/or OTC medications	150	41	109
Fire			
Burned self	4	0	4
Smoke inhalation (Carbon Monoxide)	2	0	2
Jump			
Jumped from height	16	3	13
Motor Vehicle			
Bus	1	1	0
Car	1	0	1
Tractor trailer	1	0	1
Train	4	3	1
Poisoned			
Carbon Monoxide- (Generator or motor vehicle exhaust)	26	14	12
Ingested and/or injected other type of poison (Eythlene glycol, etc.)	5	1	4
Traumatic Injury			
Shot self with firearm	494	118	376
Handgun	(382)	(94)	(288)
Rifle	(44)	(9)	(35)
Shotgun	(68)	(15)	(53)
Cut/Stabbed self	14	4	10
Other traumatic causes	2	0	2
Total	**906**	**242**	**664**

ETHANOL ASSOCIATED HOMICIDE DEATHS (N=125)

Ethanol was detected in 28.2 percent of all homicide deaths in 2007. In homicide deaths involving a firearm, ethanol was detected in 26.3 percent.

Figure 64. Homicide Deaths by Age Group by Ethanol Level, 2007

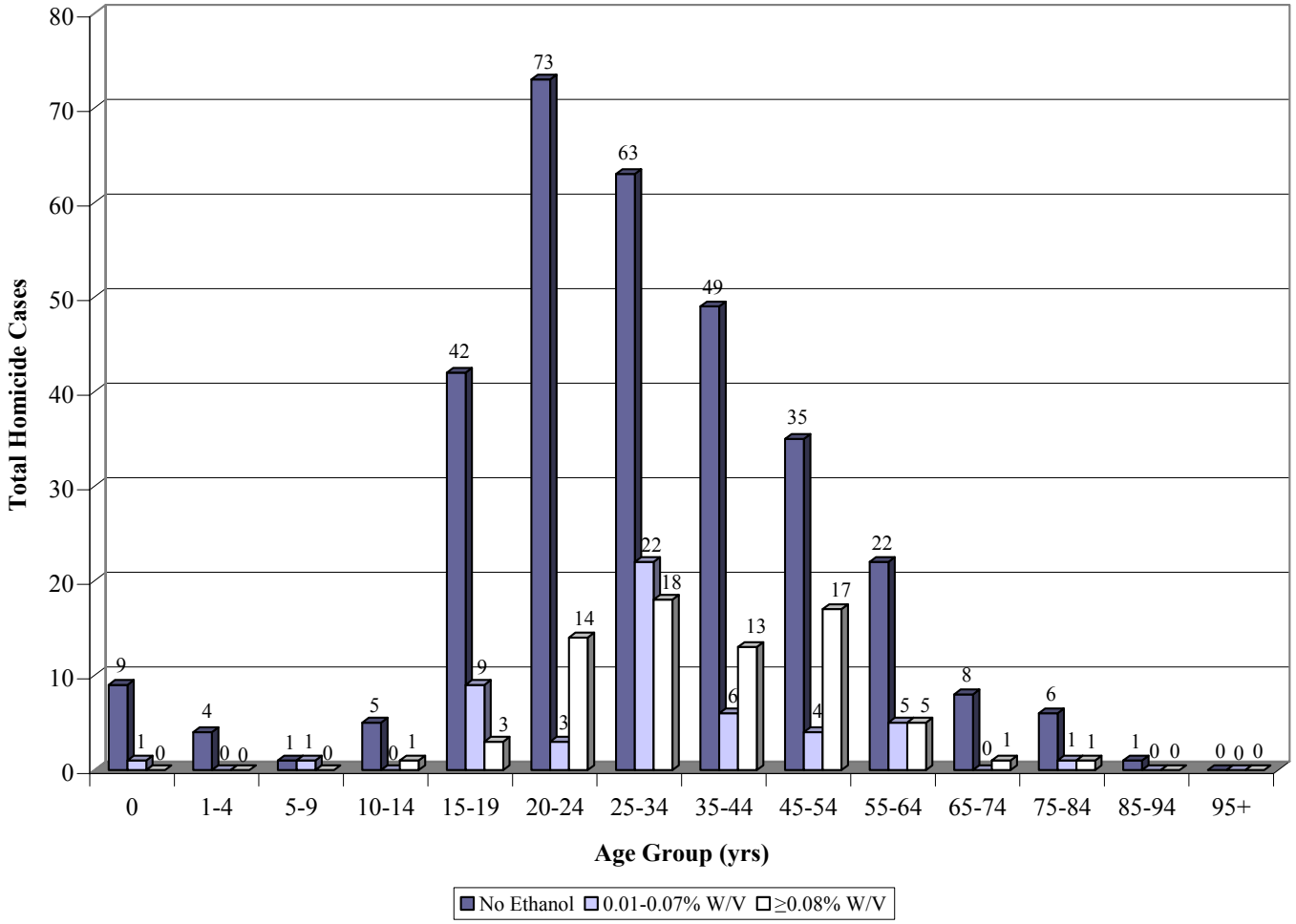


Table 28. Homicide Deaths by Ethanol Presence by Method of Death, 2007

Method of Death	Total Case	Ethanol ≥0.01% W/V Yes	No
Asphyxia			
Drowned	2	0	2
Strangled by assailant(s)	7	3	4
Suffocated/Smothered	3	2	1
Fire			
Thermal and/or inhalation injuries	2	0	2
Traumatic Injury			
Beaten by assailant(s)	42	13	29
Fall/Push	1	0	1
Poisoned (Ethanol and/or drugs)	2	0	2
Shot by assailant(s) with firearm	327	86	241
Handgun	(283)	(73)	(210)
Rifle	(8)	(2)	(6)
Shotgun	(14)	(3)	(11)
Unspecified	(22)	(8)	(14)
Stabbed by assailant(s)	49	19	30
Traumatic - Other	1	0	1
Vehicular			
Struck with vehicle by assailant(s)	3	2	1
Unknown			
Homicide - Other	4	0	4
Total	**443**	**125**	**318**

ETHANOL ASSOCIATED UNDETERMINED DEATHS (N=19)

Ethanol was detected in 15.7 percent of all undetermined deaths.

Figure 65. Undetermined Deaths by Ethanol Level by Age Group, 2007

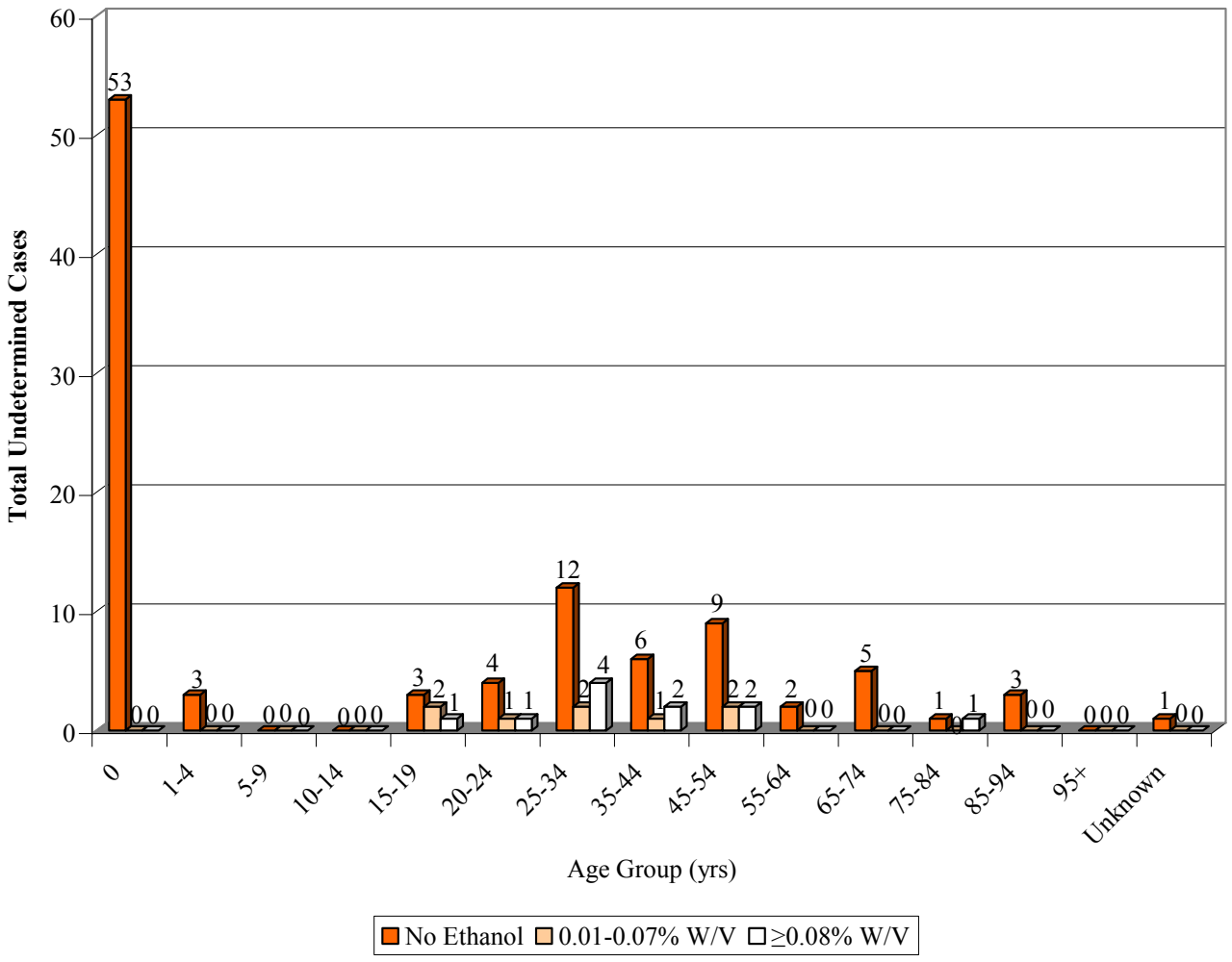


Table 29. Undetermined Deaths by Ethanol Presence by Method of Death, 2007

	Total Cases	Ethanol ≥0.01% W/V: Yes	Ethanol ≥0.01% W/V: No
Undetermined Manner & Cause of Death			
Undetermined after autopsy and/or toxicology	76	3	73
Subtotal for Undetermined Manner & Cause of Death	**76**	**3**	**73**
Undetermined Manner but Cause of Death Determined			
Asphyxia			
Drowning	2	1	1
Hanging	1	1	0
Mechanical/Positional	1	0	1
Drug Use			
Ingested/Injected medication	14	3	11
Fall			
Fall from height/same height	3	1	2
Fire			
Explosion/Victim of fire	2	1	1
Poisoned			
Inhaled toxic agent	3	2	1
Traumatic Injury			
Gunshot wound	9	3	6
Sharp force wound	2	1	1
Other traumatic causes	2	0	2
Vehicular			
Aircraft	3	1	2
Car	2	1	1
Unknown	1	1	0
Subtotal for Undetermined Manner but Cause of Death Determined	**45**	**16**	**29**
TOTAL	**121**	**19**	**102**

SECTION 6: MOTOR VEHICLE COLLISION RELATED DEATHS (N=1127)

The OCME investigated 1,127 motor vehicle collision (MVC) related deaths in 2007. In 23.4 percent of these deaths, the decedent had a measured blood alcohol level at or above the legal limit of 0.08% W/V.

- Whites accounted for 71.7 percent motor vehicle deaths and 71.6 percent of motor vehicle deaths in which the decedent had a measured blood alcohol level at or above 0.01 percent W/V.
- Overall, males died from motor vehicle incidents 2.5 times more than females and 4.6 times more than females when factoring the presence of alcohol.
- Persons aged 25-34 years old had more deaths (16.4%) in motor vehicle incidents than any other age group.
- Of all the motor vehicle related deaths, 766 or 68 percent of the decedents were drivers, while 193 or 25.2 percent of these deceased drivers had a measured blood alcohol level at or above 0.08% W/V.
- Twenty-six children under the age of 10 died in MVC-related incidents with 7 or 26.9% of them being front seat passengers.

Figure 66. Motor Vehicle Deaths by Gender by Age Group, 2007

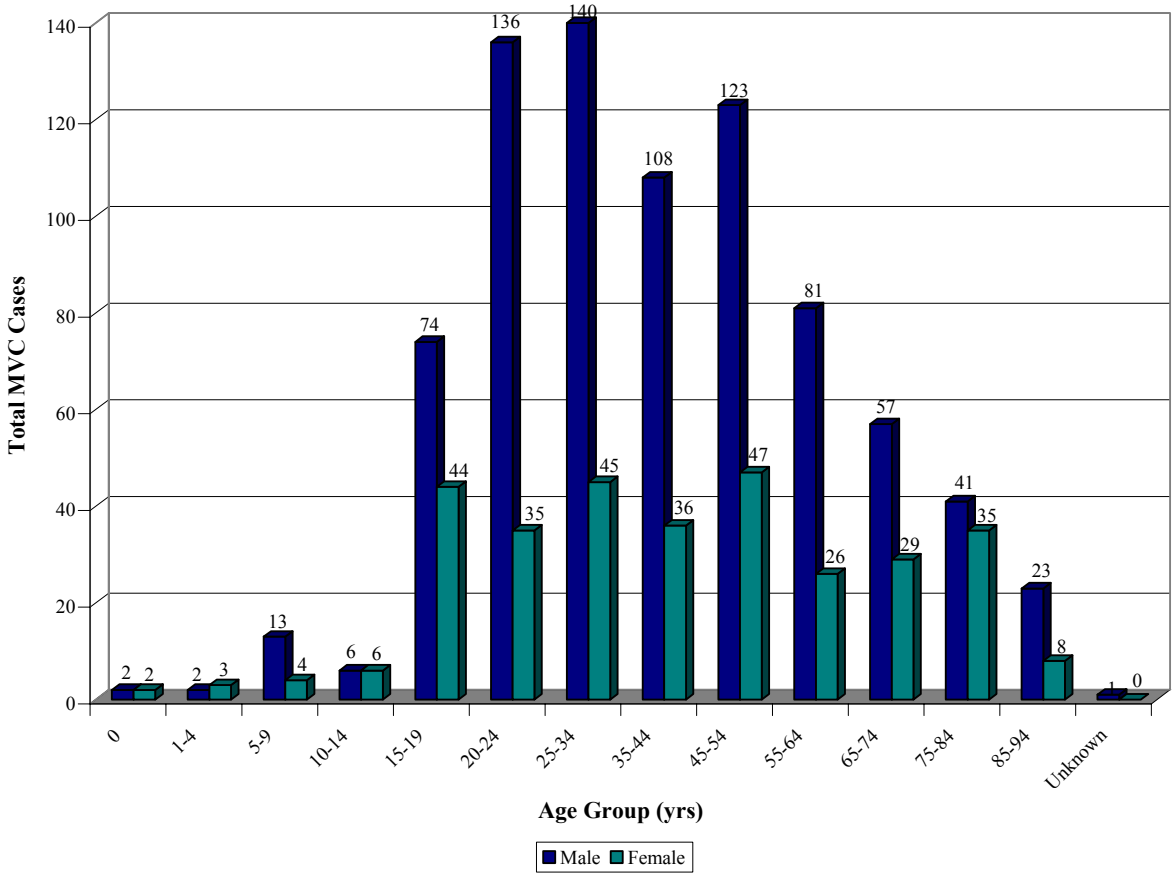


Figure 67. Motor Vehicle Deaths by Manner, 2007

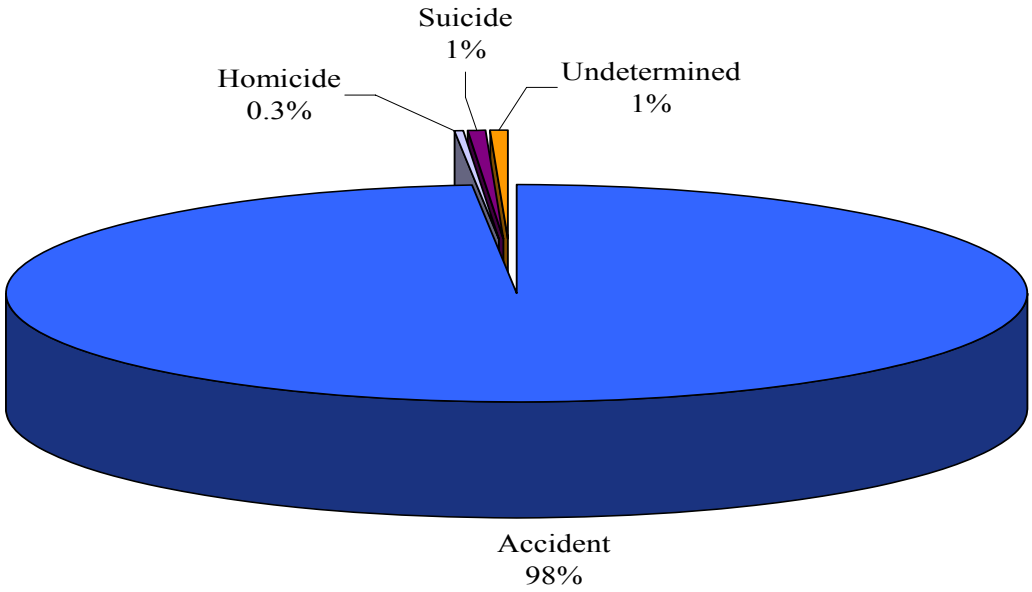


Figure 68. Motor Vehicle Deaths by Age Group by Gender by Ethanol Presence, 2007

Measured Ethanol ≥0.01% W/V

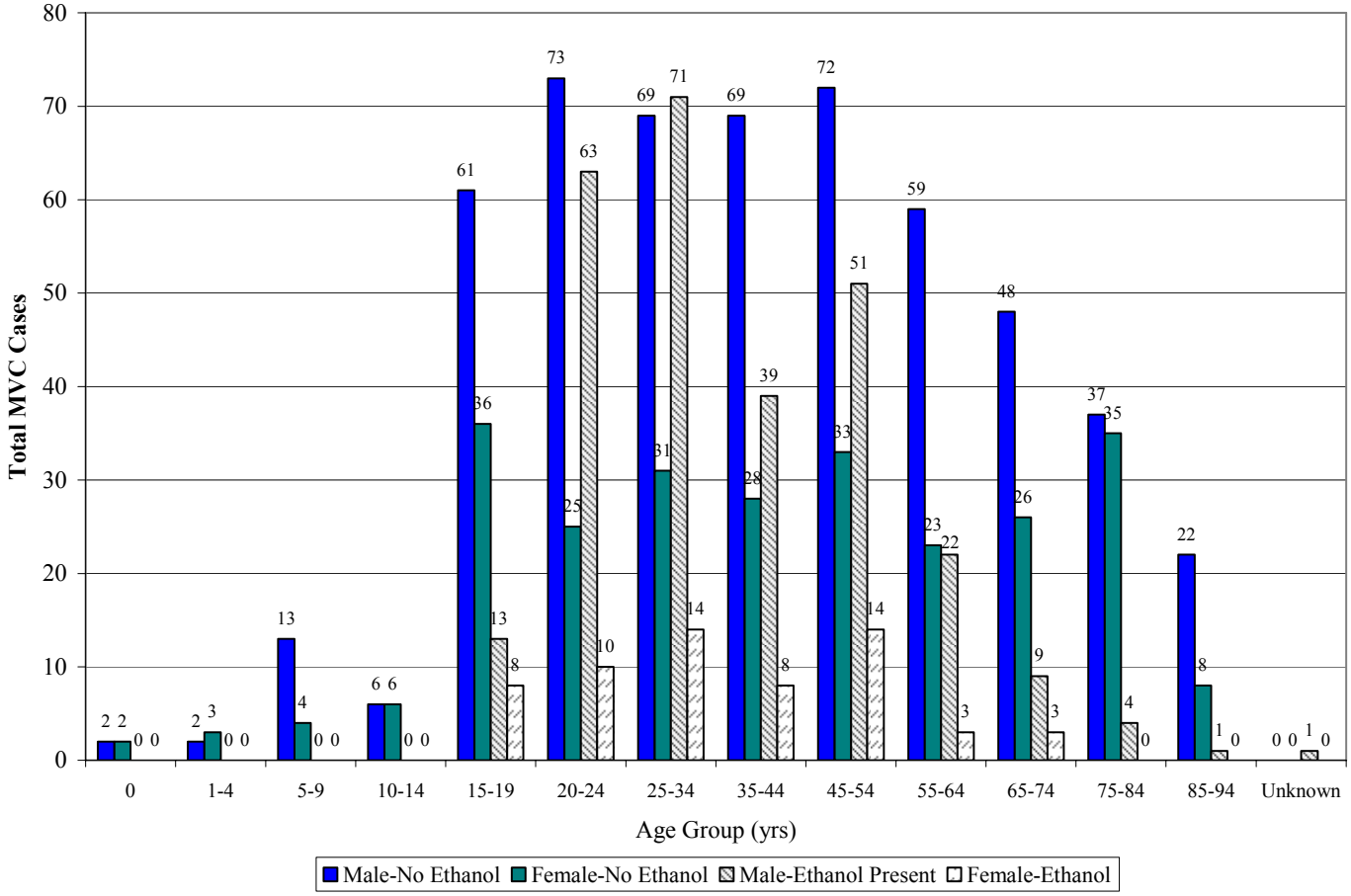
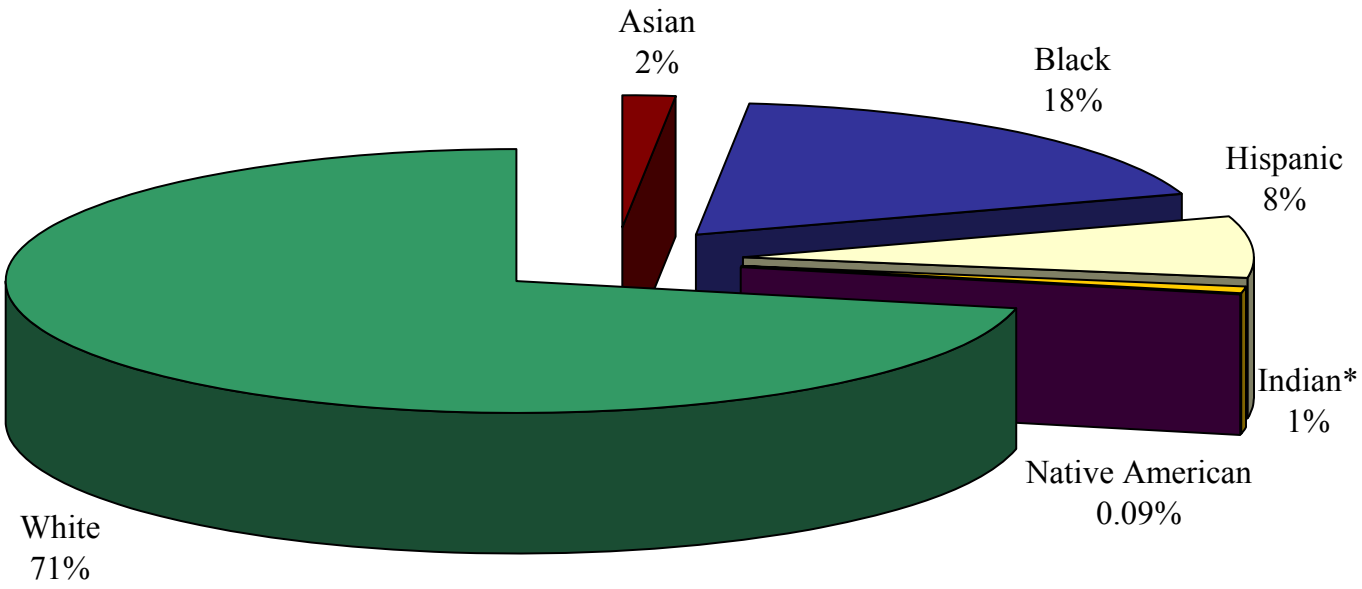
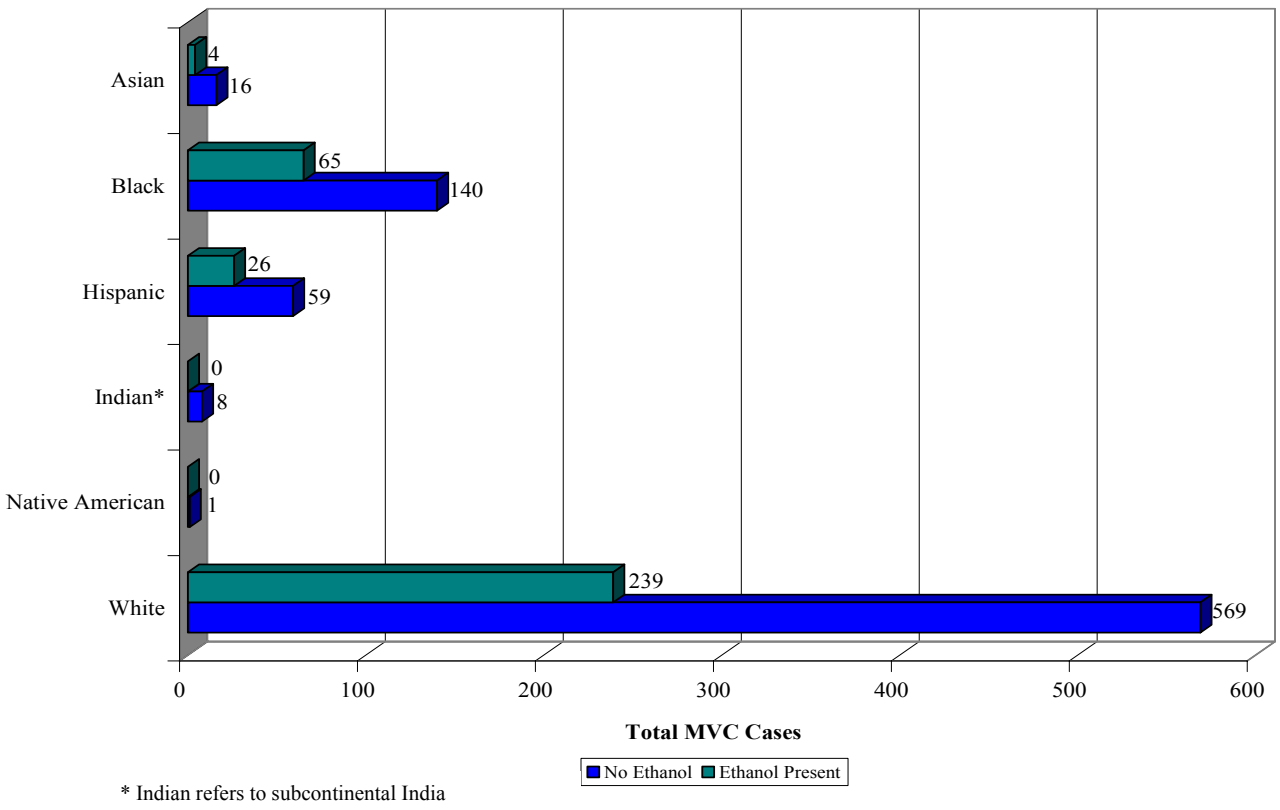


Figure 69. Proportion of Motor Vehicle Deaths by Race/Ethnicity, 2007



*Indian refers to subcontinental India

Figure 70. Motor Vehicle Deaths by Ethanol Presence by Race/Ethnicity, 2007
Measured Ethanol ≥0.01% W/V



* Indian refers to subcontinental India

Figure 71. Motor Vehicle Deaths by Ethanol Level by Position In or Out of Vehicle, 2007

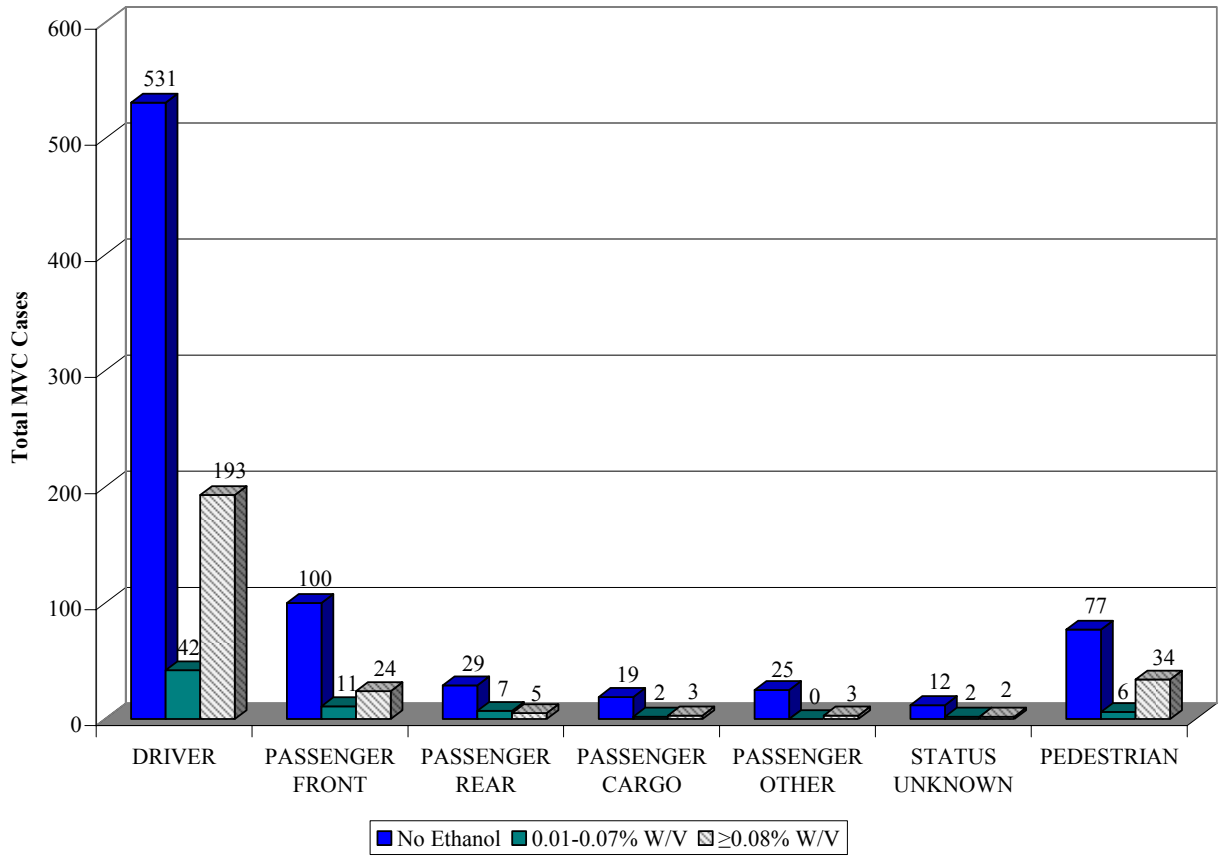


Table 30. Motor Vehicle Deaths by Age Group by Position In or Out of Vehicle, 2007

Age Group	Driver	Passenger-Front	Passenger-Rear	Passenger-Cargo	Passenger-Other	Unknown Status	Pedestrian	Total
0	0	1	2	0	1	0	0	4
1-4	0	1	2	1	1	0	0	5
5-9	1	5	4	2	1	0	4	17
10-14	1	3	2	2	3	0	1	12
15-19	64	28	13	4	5	1	3	118
20-24	130	20	6	2	4	3	6	171
25-34	138	14	7	3	4	1	18	185
35-44	106	12	1	1	2	4	18	144
45-54	124	12	0	3	4	3	24	170
55-64	80	11	0	1	0	2	13	107
65-74	55	8	0	1	3	2	17	86
75-84	50	11	3	4	0	0	8	76
85-94	16	9	1	0	0	0	5	31
Unknown	1	0	0	0	0	0	0	1
Total	**766**	**135**	**41**	**24**	**28**	**16**	**120**	**1127**

Table 31. Motor Vehicle Deaths by Decedent Status by Vehicle Type by Ethanol Level, 2007

STATUS OF DECEDENT	VEHICLE	No Ethanol	0.01-0.07% W/V	≥0.08% W/V	Total
Driver	AIRCRAFT	8	0	0	8
	ALL TERRAIN VEHICLE	11	0	6	17
	BICYCLE	5	1	2	8
	BOAT	2	0	0	2
	BUS	2	0	0	2
	CAR	245	18	98	361
	FARM EQUIPMENT	4	0	1	5
	LAWNMOWER	1	0	0	1
	MOPED	4	1	2	7
	MOTORCYCLE	94	13	26	133
	PICKUP TRUCK	57	7	24	88
	SPORT UTILITY VEHICLE	53	2	28	83
	TRACTOR TRAILER	13	0	0	13
	TRUCK OTHER	14	0	2	16
	UNKNOWN	6	0	0	6
	VAN	12	0	4	16
	SUBTOTAL	**531**	**42**	**193**	**766**
Passenger	AIRCRAFT	1	1	0	2
	ALL TERRAIN VEHICLE	2	1	0	3
	BOAT	1	0	0	1
	CAR	105	13	25	143
	MOPED	1	0	0	1
	MOTORCYCLE	2	0	1	3
	PICKUP TRUCK	17	1	4	22
	SPORT UTILITY VEHICLE	28	3	5	36
	TRUCK OTHER	2	0	0	2
	UNKNOWN	4	0	0	4
	VAN	10	1	0	11
	SUBTOTAL	**173**	**20**	**35**	**228**
Pedestrian	BUS	2	0	2	4
	CAR	37	6	12	55
	DUMP TRUCK	1	0	0	1
	FARM EQUIPMENT	2	0	0	2
	MOTORCYCLE	0	0	1	1
	MULTIPLE	2	0	0	2
	PICKUP TRUCK	9	0	3	12
	SPORT UTILITY VEHICLE	10	0	3	13
	TRACTOR TRAILER	4	0	2	6
	TRAIN	1	0	5	6
	TRUCK OTHER	2	0	1	3
	UNKNOWN	3	0	3	6
	VAN	4	0	2	6
	SUBTOTAL	**77**	**6**	**34**	**117**

continued

STATUS OF DECEDENT	VEHICLE	No Ethanol	0.01-0.07% W/V	≥0.08% W/V	Total
Unknown Status	CAR	4	1	2	7
	PICKUP TRUCK	2	0	0	2
	UNKNOWN	6	1	0	7
	SUBTOTAL	**12**	**2**	**2**	**16**
TOTAL		**793**	**70**	**264**	**1127**

SECTION 7: DRUG/POISON CAUSED DEATHS (N=717)

In 2007, the 717 drug/poison caused deaths were most frequently assigned (76.1%) as accidental deaths. Prescription drug and illegal drug poisonings accounted for 75.3 percent of all drug caused deaths.

- The overall rate of drug/poison caused deaths for Virginia residents was 9.3 per 100,000 people.
- These deaths were greatest among males (59.2%), among those 45-54 years old (29.3%), and among whites (83.1%).
- Narcotics were the most frequently identified class of compounds present in decedents (36.7%) followed by anti-anxiety medications (15.4%).
- Twenty of the 719 or 2.8% of drug/poison deaths were ethanol-only deaths.
- Dickenson County had the highest rate (61.9 per 100,000 people) for drug/poison caused deaths in 2007 by county of residence, while Albemarle had the lowest rate of 2.1 per 100,000 people for those counties or independent cities with at least 1 drug/poison death.
- Whites were 4.7 times more likely than blacks to die due to prescription drugs, while blacks were 2.1 times more likely than whites to die due to illegal drugs.

Figure 72. Drug/Poison Caused Deaths by Age Group by Gender, 2007

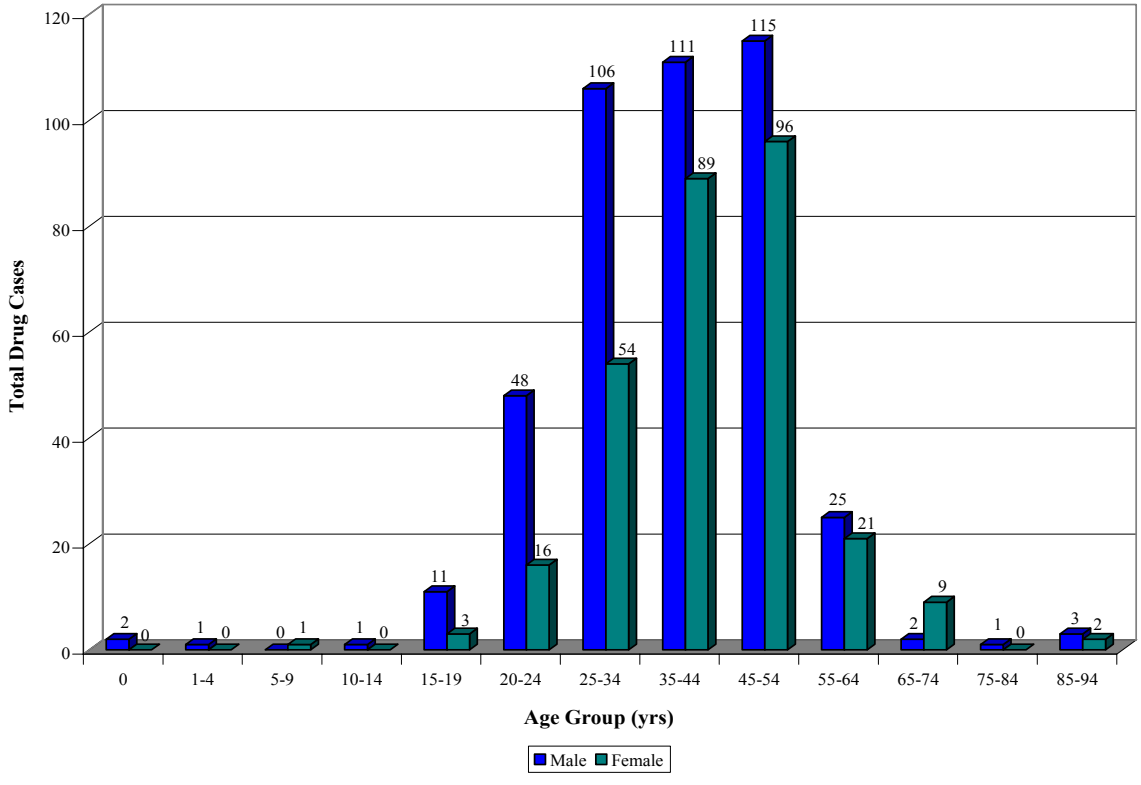


Figure 73. Proportion of Drug/Poison Caused Deaths by Race/Ethnicity, 2007

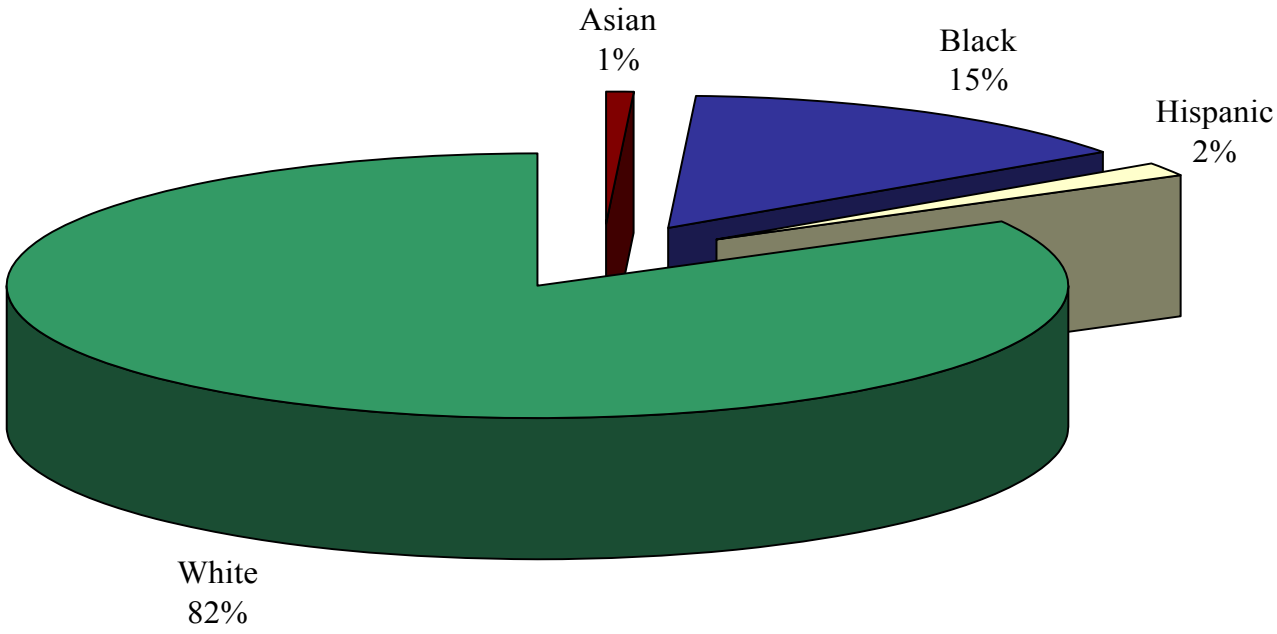


Figure 74. Proportion of Drug/Poison Caused Deaths by Manner of Death, 2007

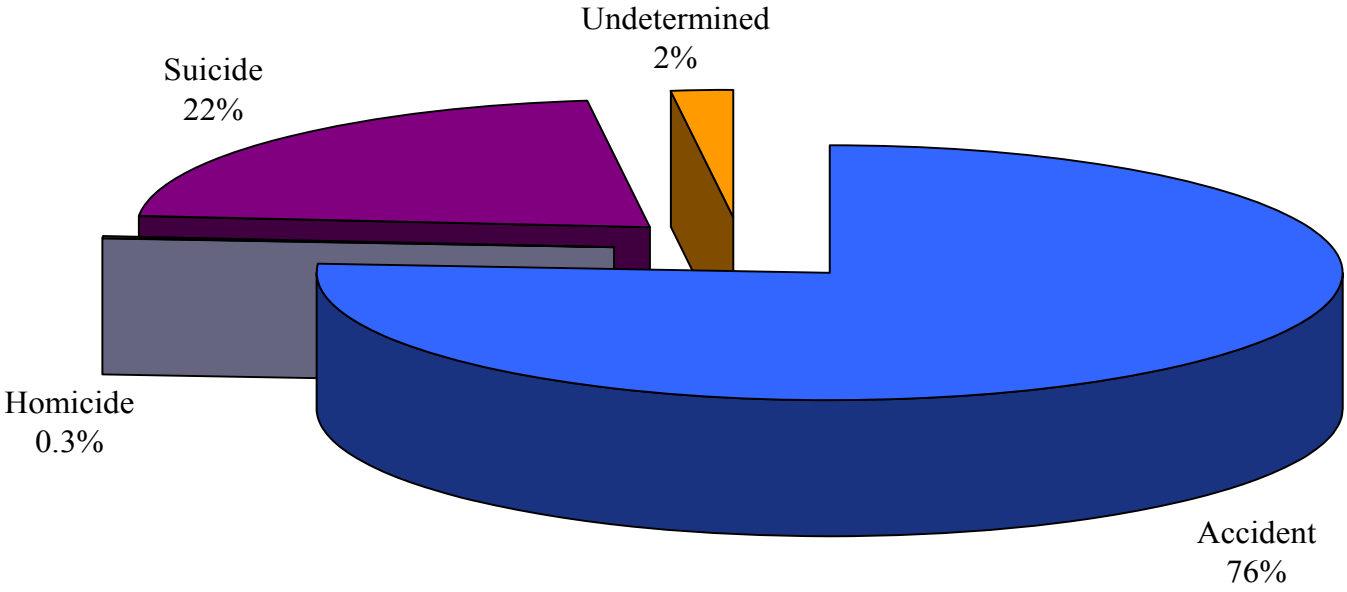


Table 32. Drug/Poison Caused Deaths by OCME District, 2007

OCME District	Cases	Percent
Central	177	24.6%
Northern	168	23.4%
Tidewater	167	23.3%
Western	205	28.7%
Total	**717**	**100%**

Table 33. Drug/Poison Caused Deaths by Cause of Death by OCME District, 2007

Cause of Death	District				
	Central	Northern	Tidewater	Western	Total
Ethanol Poisoning	5	5	4	6	20
Prescription Drug Poisoning	78	91	75	144	388
Illegal (Street) Drug Poisoning	65	29	47	11	152
Mixed Category Drug Poisoning	12	33	32	36	113
Inhalant Poisoning	1	2	1	1	5
OTC Poisoning	7	5	3	2	17
Ethylene Glycol Poisoning	1	2	2	0	5
Not Otherwise Specified Poisoning	4	1	2	5	12
Other Poisons (Heavy Metals, etc.)	3	0	1	0	4
Other Unnatural	1	0	0	0	1
Total	**177**	**169**	**167**	**205**	**717**

Figure 75. Total Drug/Poison Deaths & Rate by Year of Death, 1999-2007

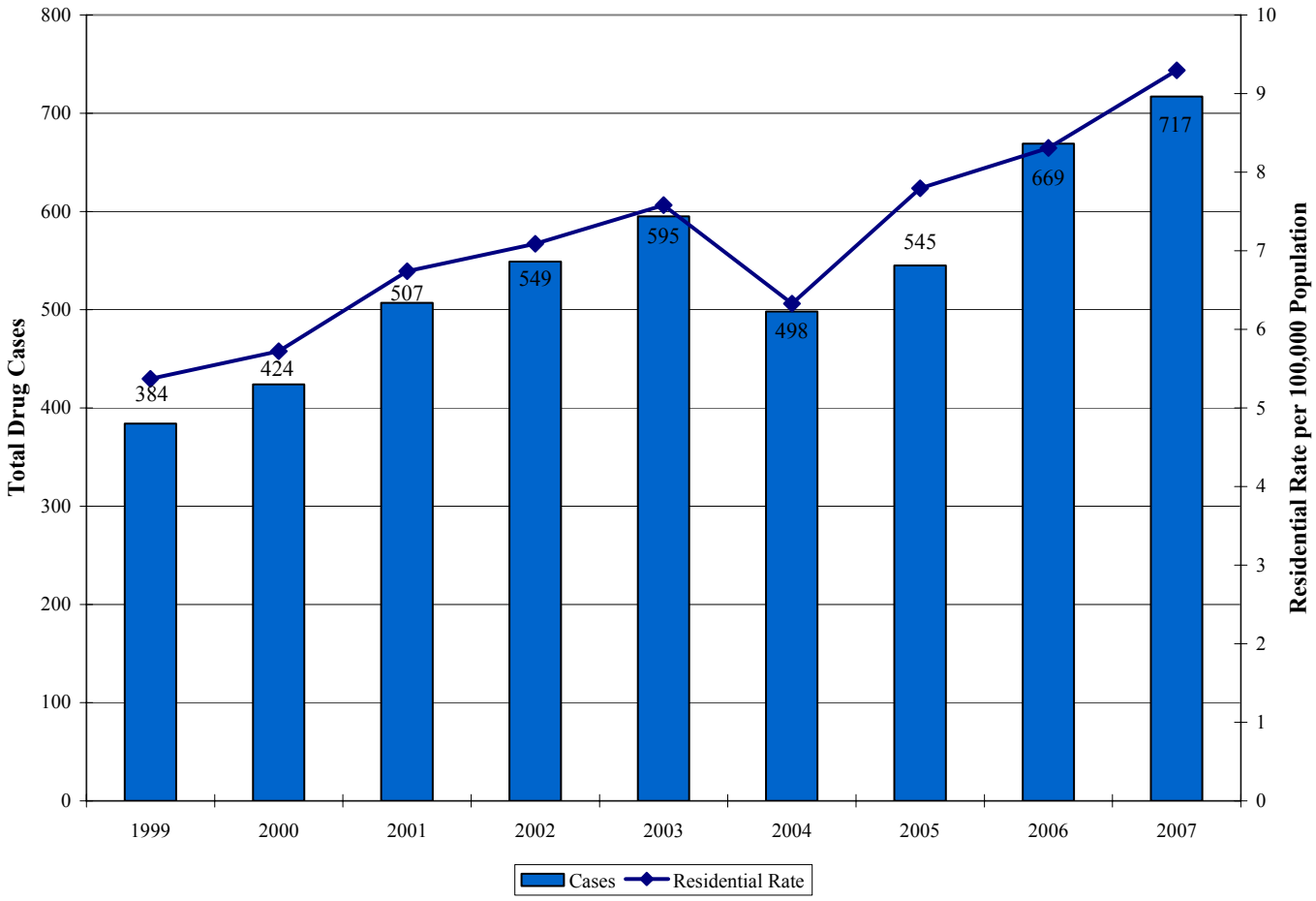
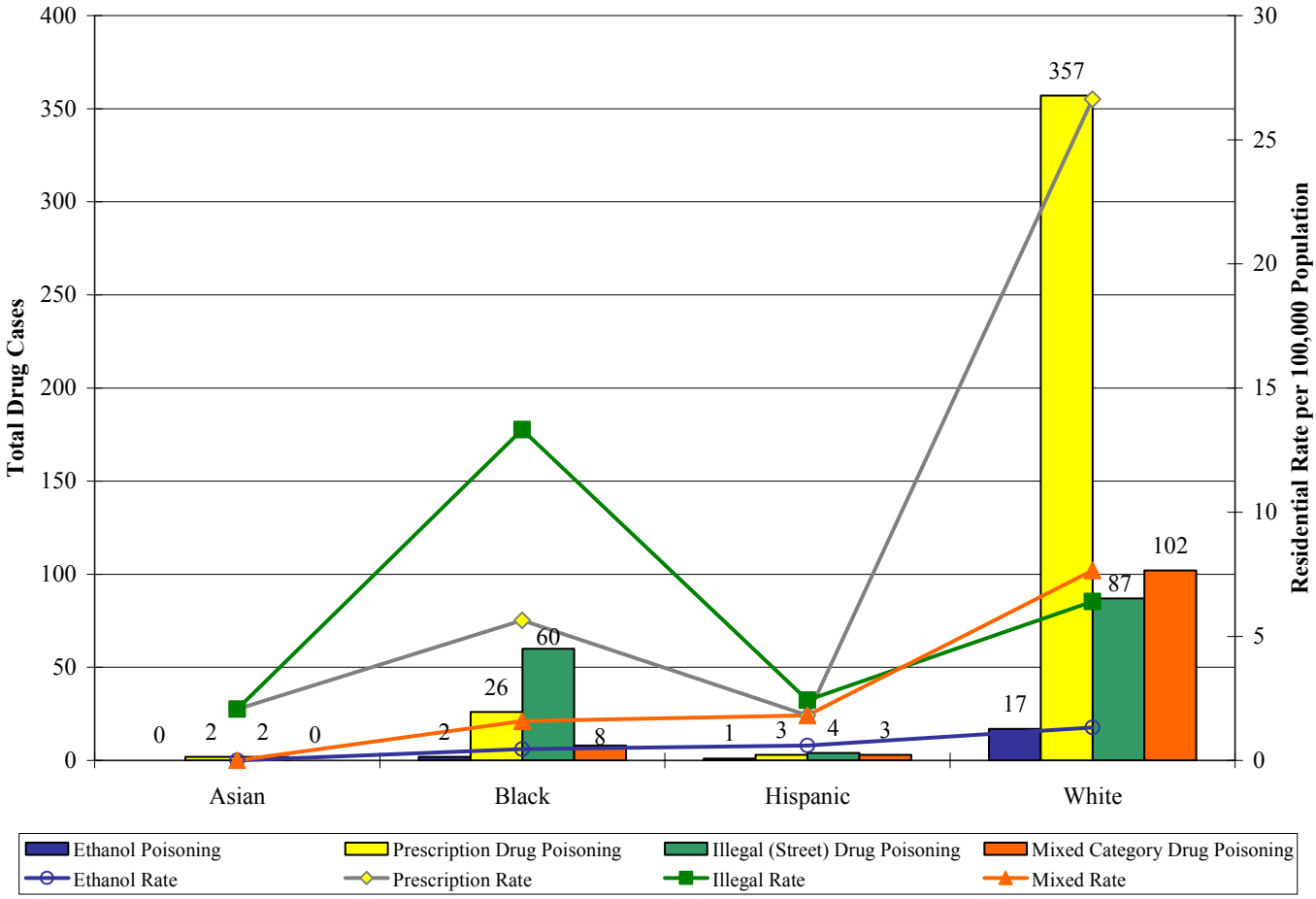


Figure 76. Specific Types of Drug/Poison Caused Deaths by Race/Ethnicity, 2007



Illegal drug poisonings are those deaths that are primarily caused by an illicit drug (ex. cocaine, heroin, etc.). (Note: Diagnosis of a heroin death requires morphine as well as detection of 6-acteylmorphine, a specific metabolic product of heroin that is present for a very short period of time. Thus, the true number of heroin deaths is always under estimated.) Prescription drugs are drugs that are prescribed by medical personnel, but the decedent may or may not have obtained the drugs legally. A Mixed Category drug poisoning is a combination of two or more of the different drug types, such as an illegal drug and an over-the-counter medication.

Figure 77. Drug/Poison Caused Deaths by Drug Type by Gender, 2007

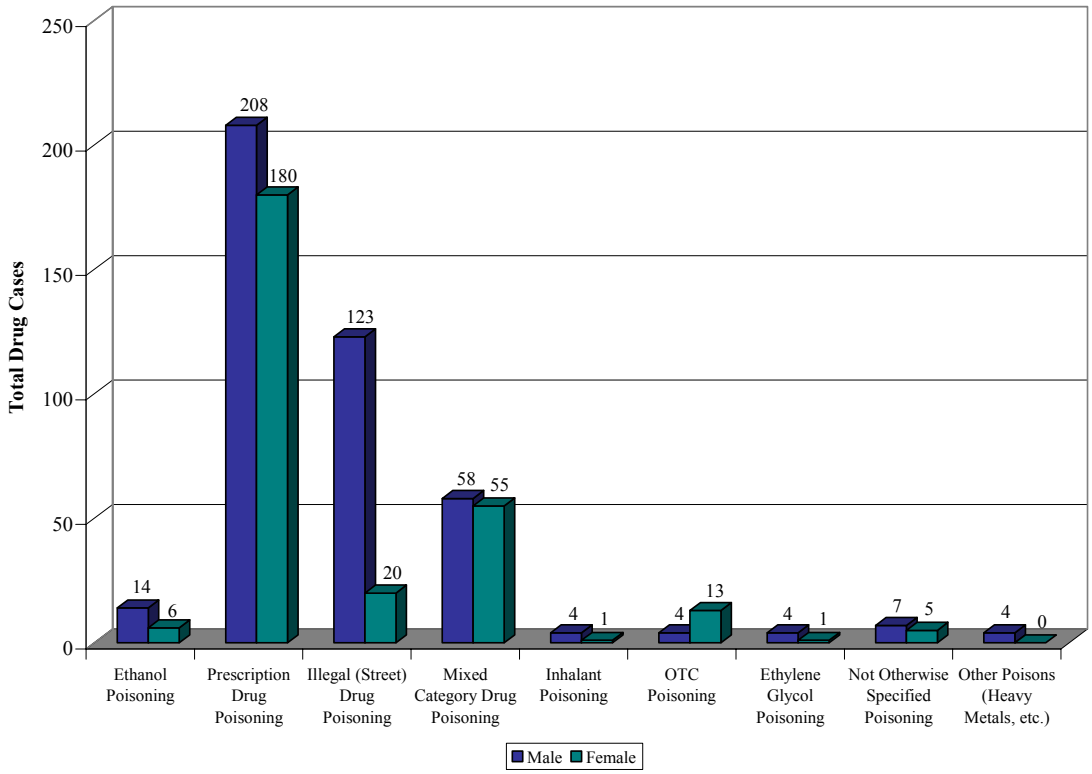


Figure 78. Drug/Poison Caused Deaths by Drug Type by Ethanol Presence, 2007

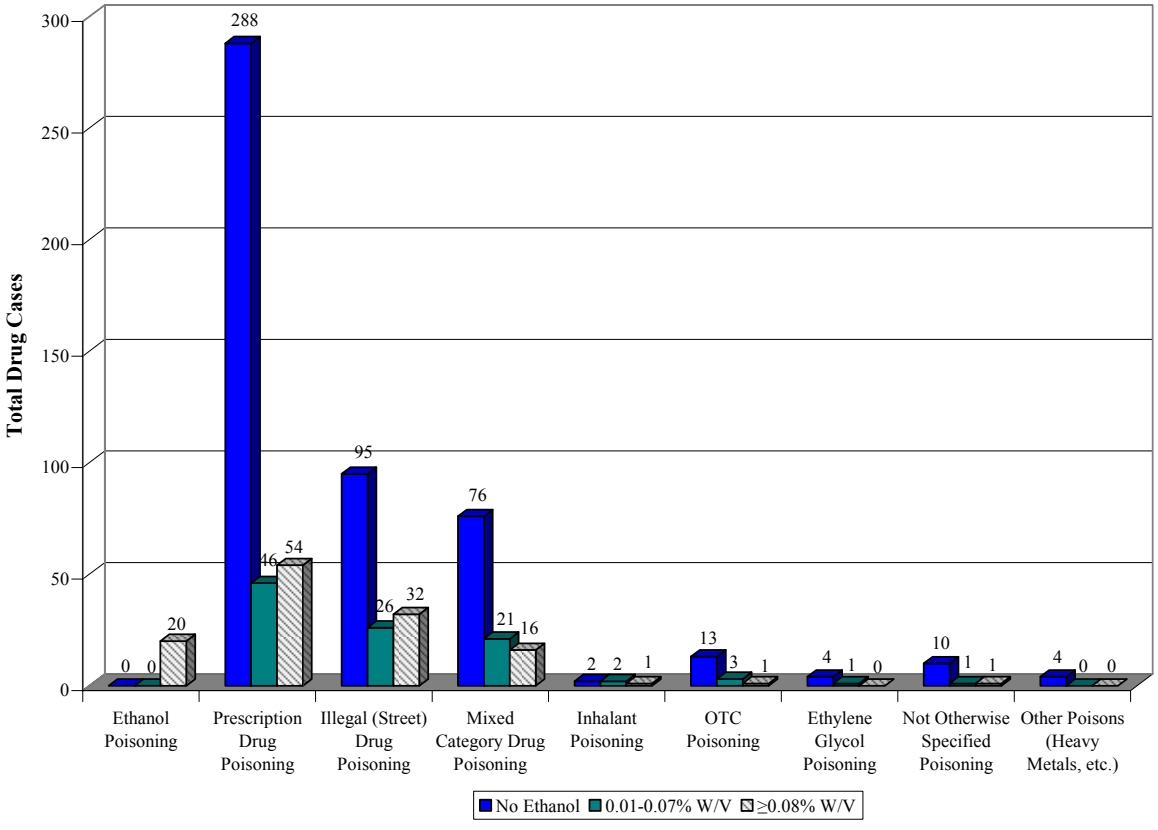
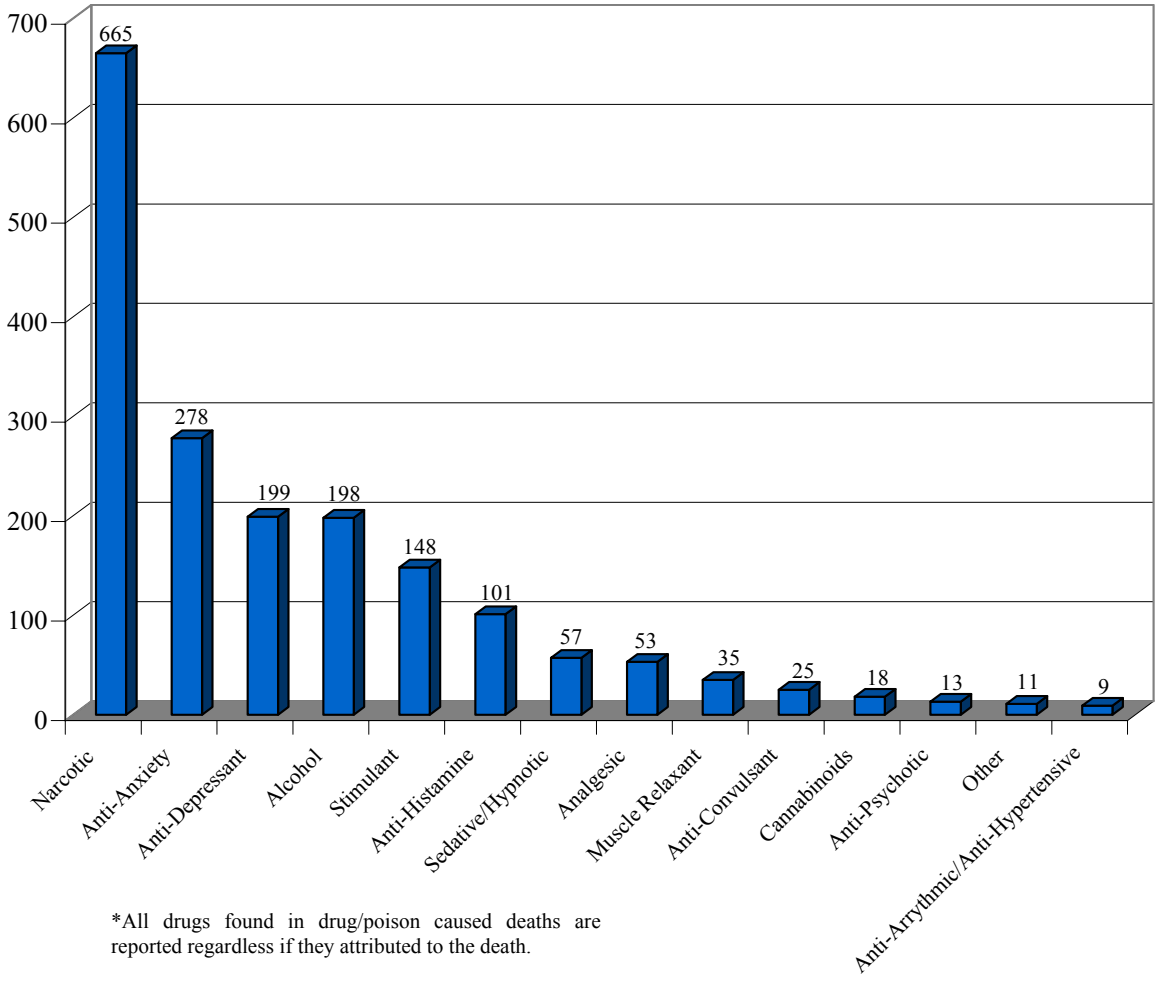


Table 34. Drug/Poison Caused Deaths by Manner of Death by Age Group, 2007

	Manner of Death				
Age Group	**Accident**	**Homicide**	**Suicide**	**Undetermined**	**Total**
0	1	1	0	0	2
1-4	0	1	0	0	1
5-9	1	0	0	0	1
10-14	1	0	0	0	1
15-19	11	0	2	1	14
20-24	57	0	7	0	64
25-34	134	0	23	3	160
35-44	159	0	38	3	200
45-54	151	0	54	6	211
55-64	25	0	21	0	46
65-74	4	0	6	1	11
75-84	0	0	1	0	1
85-94	2	0	3	0	5
95+	0	0	0	0	0
Total	**546**	**2**	**155**	**14**	**717**

Figure 79. Classes of All Drugs/Poisons Present* in Drug/Poison Caused Deaths, 2007



*All drugs found in drug/poison caused deaths are reported regardless if they attributed to the death.

Table 35. Drug/Poison Caused Deaths by Manner by Drug/Poison Type, 2007

Manner of Death	Total
Accident	
Ethanol Poisoning	20
Prescription Drug Poisoning	269
Illegal (Street) Drug Poisoning	149
Mixed Category Drug Poisoning	88
Inhalant Poisoning	5
OTC Poisoning	2
Ethylene Glycol Poisoning	1
Not Otherwise Specified Poisoning	10
Other Poisons (Heavy Metals, etc.)	1
Other Unnatural	1
Subtotal	546

Homicide	
Prescription Drug Poisoning	1
OTC Poisoning	1
Subtotal	2
Suicide	
Prescription Drug Poisoning	110
Illegal (Street) Drug Poisoning	1
Mixed Category Drug Poisoning	23
OTC Poisoning	12
Ethylene Glycol Poisoning	4
Not Otherwise Specified Poisoning	2
Other Poisons (Heavy Metals, etc.)	3
Subtotal	155
Undetermined	
Prescription Drug Poisoning	8
Illegal (Street) Drug Poisoning	2
Mixed Category Drug Poisoning	2
OTC Poisoning	2
Subtotal	14
Total	717

Table 36. All Drugs/Poison/Active Metabolites Present* in Drug/Poison Caused Deaths, 2007‡

Class	Drug/Poison/Active Metabolite	Total
Alcohol		
	ETHANOL	196
	ISOPROPANOL	1
	METHANOL	1
	Alcohol Total	**198**
Analgesic		
	ACETAMINOPHEN	12
	BUPRENORPHINE	1
	DEXTROMETHORPHAN	9
	NORBUPRENORPHINE (Buprenorphine Metabolite)	1
	ORPHENADRINE	5
	PHENACETIN	1
	SALICYLIC ACID	4
	TRAMADOL	20
	Analgesic Total	**53**
Anti-Anxiety		
	ALPRAZOLAM	83
	CHLORDIAZEPOXIDE	1
	DIAZEPAM	81
	LORAZEPAM	8
	MEPROBAMATE	17
	NITRAZEPAM	1
	NORDIAZEPAM	83
	OXAZEPAM	4
	Anti-Anxiety Total	**278**
Anti-Arrythmic/Anti-Hypertensive		
	DILTIAZEM	1
	METOPROLOL	1
	PROPRANOLOL	2
	VERAPAMIL	5
	Anti-Arrythimic/Anti-Hypertensive Total	**9**
Anti-Convulsant		
	CARBAMAZEPINE	2
	CLONAZEPAM	7
	GABAPENTIN	3
	LAMOTRIGINE	3
	OXCARBAZEPINE	2
	PHENOBARBITAL	3
	PHENYTOIN	1
	TOPIRAMATE	3
	VALPROIC ACID	1
	Anti-Convulsant Total	**25**
Anti-Depressant		
	AMITRIPTYLINE	24
	BUPROPION (Wellbutrin)	18
	CITALOPRAM	47
	CLOMIPRAMINE	1
	DESIPRAMINE	1

continued

Class	Drug/Poison/Active Metabolite	Total
	DOXEPIN	3
	FLUOXETINE	21
	FLUVOXAMINE	1
	IMIPRAMINE	1
	MAPROTILINE	1
	MIRTAZAPINE	15
	NORTRIPTYLENE	24
	NORVENLAFAXINE (Venlafaxine Metabolite)	1
	PAROXETINE	6
	SERTRALINE	11
	TRAZODONE	16
	VENLAFAXINE	8
	Anti-Depressant Total	**199**
Anti-Histamine		
	CHLORPHENIRAMINE	13
	DIPHENHYDRAMINE	43
	DOXYLAMINE	9
	MECLIZINE	1
	PHENIRAMINE	1
	QUETIAPINE	34
	Anti-Histamine Total	**101**
Anti-Psychotic		
	ATOMOXETINE	1
	CLOZAPINE	2
	OLANZAPINE	10
	Anti-Psychotic Total	**13**
Cannabinoids		
	TETRAHYDROCANNABINOL CARBOXYLIC ACID	18
	Cannabinoids Total	**18**
Muscle Relaxant		
	CARISOPRODOL	16
	CYCLOBENZAPRINE	17
	METAXALONE	2
	Muscle Relaxant Total	**35**
Narcotic		
	ACETYLMORPHINE (Heroin Metabolite)	26
	CODEINE	10
	CODEINE (Heroin Metabolite)	42
	FENTANYL	45
	HYDROCODEINE	1
	HYDROCODONE	87
	HYDROMORPHONE	18
	MEPERIDINE	3
	METHADONE	133
	MORPHINE	62
	MORPHINE (Heroin)	78
	NORPROPOXYPHENE (Propoxyphene Metabolite)	20
	OXYCODONE	96
	OXYMORPHONE	18
	PENTAZOCINE	1
	PROPOXYPHENE	25

continued

Class	Drug/Poison/Active Metabolite	Total
	Narcotic Total	**665**
Other		
	DIFLUOROETHANE	1
	ETHYLENE GLYCOL	3
	FREON-113 TRICHLOROTRIFLUOROETHANE	1
	METOCLOPRAMIDE	1
	NITROUS OXIDE	1
	PHENCYCLIDINE	2
	TRICHOLOETHANOL (Chloral Hydrate)	1
	TRIMETHOPRIM	1
	Other Total	**11**
Sedative/Hypnotic		
	BUTALBITAL	5
	PROMETHAZINE	24
	PROPOFOL	1
	SECOBARBITAL	1
	TEMAZEPAM	12
	ZOLPIDEM	13
	ZOPICLONE	1
	Sedative/Hypnotic Total	**57**
Stimulant		
	AMPHETAMINE	9
	COCAETHYLENE	32
	COCAINE	99
	METHAMPHETAMINE	5
	METHYLENEDIOXYMETHAMPHETAMINE	3
	Stimulant Total	**148**
TOTAL		**1810**

*All drugs found in drug/poison caused deaths are reported regardless if they attributed to the death.
‡Due to a switch over to a new database system, the toxicology results may have a low level of reliability; therefore, do not compare these numbers to previous or future years.

Table 37. Drugs/Poisons/Active Metabolites Causing Death in Drug/Poison Caused Deaths, 2007‡

Class	Drug/Poison/Active Metabolite	Total
Alcohol		
	ETHANOL	128
	ISOPROPANOL	1
	METHANOL	1
	Alcohol Total	**130**
Analgesic		
	ACETAMINOPHEN	7
	BUPRENORPHINE	1
	DEXTROMETHORPHAN	6
	ORPHENADRINE	3
	SALICYLIC ACID	3
	TRAMADOL	17
	Analgesic Total	**37**

continued

Class	Drug/Poison/Active Metabolite	Total
Anti-Anxiety		
	ALPRAZOLAM	59
	DIAZEPAM	55
	LORAZEPAM	5
	MEPROBAMATE	2
	NORDIAZEPAM	47
	OXAZEPAM	2
	Anti-Anxiety Total	**170**
Anti-Arrythmic/Anti-Hypertensive		
	METOPROLOL	1
	PROPRANOLOL	2
	VERAPAMIL	3
	Anti-Arrythmic/Anti-Hypertensive Total	**6**
Anti-Convulsant		
	CLONAZEPAM	2
	GABAPENTIN	2
	LAMOTRIGINE	2
	OXCARBAZEPINE	1
	PHENOBARBITAL	1
	TOPIRAMATE	3
	VALPROIC ACID	
	Anti-Convulsant Total	**11**
Anti-Depressant		
	AMITRIPTYLINE	20
	BUPROPION (Wellbutrin)	8
	CITALOPRAM	29
	CLOMIPRAMINE	1
	DOXEPIN	2
	FLUOXETINE	16
	FLUVOXAMINE	1
	MAPROTILINE	1
	MIRTAZAPINE	12
	NORTRIPTYLENE	11
	PAROXETINE	1
	SERTRALINE	6
	TRAZODONE	10
	VENLAFAXINE	4
	Anti-Depressant Total	**122**
Anti-Histamine		
	CHLORPHENIRAMINE	7
	DIPHENHYDRAMINE	26
	DOXYLAMINE	7
	QUETIAPINE	24
	Anti-Histamine	**64**
Anti-Psychotic		
	ATOMOXETINE	1
	CLOZAPINE	2
	OLANZAPINE	8
	Anti-Psychotic Total	**11**
Muscle Relaxant		
	CARISOPRODOL	13

continued

Class	Drug/Poison/Active Metabolite	Total
	CYCLOBENZAPRINE	13
	METAXALONE	2
	Muscle Relaxant Total	**28**
Narcotic		
	CODEINE	7
	CODEINE (Heroin Metabolite)	39
	FENTANYL	44
	HYDROCODEINE	1
	HYDROCODONE	78
	HYDROMORPHONE	13
	MEPERIDINE	2
	METHADONE	133
	MORPHINE	59
	MORPHINE(HEROIN)	77
	NORPROPOXYPHENE (Propoxyphene Metabolite)	5
	OXYCODONE	88
	OXYMORPHONE	6
	PENTAZOCINE	1
	PROPOXYPHENE	20
	Narcotic Total	**573**
Other		
	DIFLUOROETHANE	1
	ETHYLENE GLYCOL	3
	FREON-113 TRICHLOROTRIFLUOROETHANE	1
	NITROUS OXIDE	1
	PHENCYCLIDINE	2
	TRICHOLOETHANOL (Chloral Hydrate)	1
	Other Total	**9**
Sedative/Hypnotic		
	BUTALBITAL	3
	PROMETHAZINE	12
	PROPOFOL	1
	SECOBARBITAL	1
	TEMAZEPAM	6
	ZOLPIDEM	9
	Sedative/Hypnotic Total	**32**
Stimulant		
	AMPHETAMINE	7
	COCAINE	90
	METHAMPHETAMINE	5
	METHYLENEDIOXYMETHAMPHETAMINE	1
	Stimulant Total	**103**
TOTAL		**1296**

‡Due to a switch over to a new database system, the toxicology results may have a low level of reliability; therefore, do not compare these numbers to previous or future years.

Table 38. Drug/Poison Caused Deaths by City/County of Residence, 2007

City/County of Residence	Deaths	Rate
Accomack	3	7.8
Albemarle	2	2.1
Alexandria	11	7.9
Alleghany	1	6.1
Amelia	0	0.0
Amherst	4	12.4
Appomattox	1	7.0
Arlington	11	5.4
Augusta	6	8.5
Bath	0	0.0
Bedford City	0	0.0
Bedford	4	6.0
Bland	0	0.0
Botetourt	0	0.0
Bristol	3	17.1
Brunswick	0	0.0
Buchanan	7	29.3
Buckingham	3	18.8
Buena Vista	0	0.0
Campbell	2	3.8
Caroline	3	11.0
Carroll	3	10.3
Charles City	1	14.0
Charlotte	0	0.0
Charlottesville	4	9.7
Chesapeake	21	9.6
Chesterfield	20	6.7
Clarke	0	0.0
Clifton Forge	0	0.0
Colonial Heights	0	0.0
Covington	0	0.0
Craig	0	0.0
Culpeper	6	13.1
Cumberland	3	31.2
Danville	8	17.8
Dickenson	10	61.9
Dinwiddie	0	0.0
Emporia	2	35.6

City/County of Residence	Deaths	Rate
Essex	0	0.0
Fairfax City	3	12.8
Fairfax	55	5.4
Falls Church	0	0.0
Fauquier	13	19.6
Floyd	2	13.7
Fluvanna	3	11.8
Franklin City	0	0.0
Franklin	3	5.9
Frederick	9	12.3
Fredericksburg	6	26.8
Galax	0	0.0
Giles	2	11.6
Gloucester	3	7.8
Goochland	1	4.9
Grayson	0	0.0
Greene	2	11.2
Greensville	0	0.0
Halifax	3	8.4
Hampton	8	5.5
Hanover	6	6.1
Harrisonburg	1	2.3
Henrico	19	6.6
Henry	5	9.0
Highland	0	0.0
Hopewell	2	8.7
Isle of Wight	4	11.4
James City	5	8.2
King and Queen	0	0.0
King George	0	0.0
King William	1	6.4
Lancaster	2	17.3
Lee	4	17.0
Loudoun	13	4.7
Louisa	4	12.5
Lunenburg	0	0.0
Lynchburg	6	8.4
Madison	1	7.3

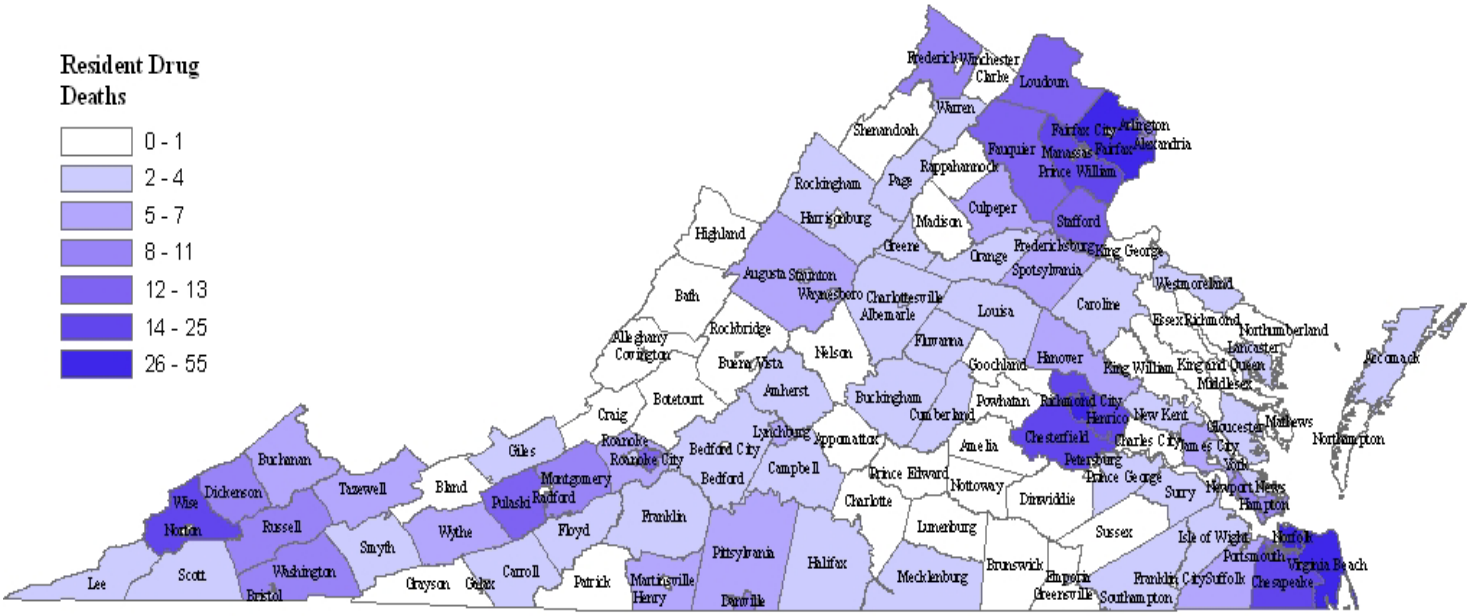
continued

City/County of Residence	Deaths	Rate
Manassas	6	16.9
Martinsville	1	6.9
Mathews	0	0.0
Mecklenburg	2	6.2
Middlesex	0	0.0
Montgomery	11	12.3
Nelson	0	0.0
New Kent	2	11.7
Newport News	11	6.1
Norfolk	45	19.1
Northampton	1	7.5
Northumberland	1	7.8
Norton	0	0.0
Nottoway	0	0.0
Orange	3	9.2
Page	4	16.6
Patrick	1	5.3
Petersburg	1	3.0
Pittsylvania	6	9.9
Poquoson	1	8.4
Portsmouth	12	11.8
Powhatan	1	3.6
Prince Edward	0	0.0
Prince George	3	8.4
Prince William	21	5.8
Pulaski	13	37.1
Radford	1	6.2
Rappahannock	0	0.0
Richmond City	42	21.0
Richmond	0	0.0
Roanoke City	12	13.0
Roanoke	5	5.5
Rockbridge	1	4.7
Rockingham	4	5.4
Russell	9	31.2
Salem	3	11.9
Scott	4	17.6
Shenandoah	1	2.5
Smyth	2	6.2
South Boston	0	0.0
Southampton	2	11.3
Spotsylvania	6	5.0
Stafford	13	10.8
Staunton	3	12.6
Suffolk	5	6.1
Surry	2	28.2
Sussex	0	0.0
Tazewell	6	13.7
Virginia Beach	43	9.9
Warren	2	5.5
Washington	10	19.0
Waynesboro	2	9.2
Westmoreland	3	17.4
Williamsburg	0	0.0
Winchester	0	0.0
Wise	25	60.0
Wythe	5	17.5
York	4	6.5
TOTAL FOR STATE RESIDENTS	**686**	**8.9**
Out of State	31	ND†
TOTAL	**717**	**ND**

†ND- No Denominator

Individuals may or may not have been fatally injured and/or died in their city/county of residence.

Figure 80. Drug/Poison Caused Deaths by City/County of Residence, 2007



Individuals may or may not have been fatally injured and/or died in their city/county of residence.

Figure 81. Drug/Poison Caused Death Rates by City/County of Residence, 2007

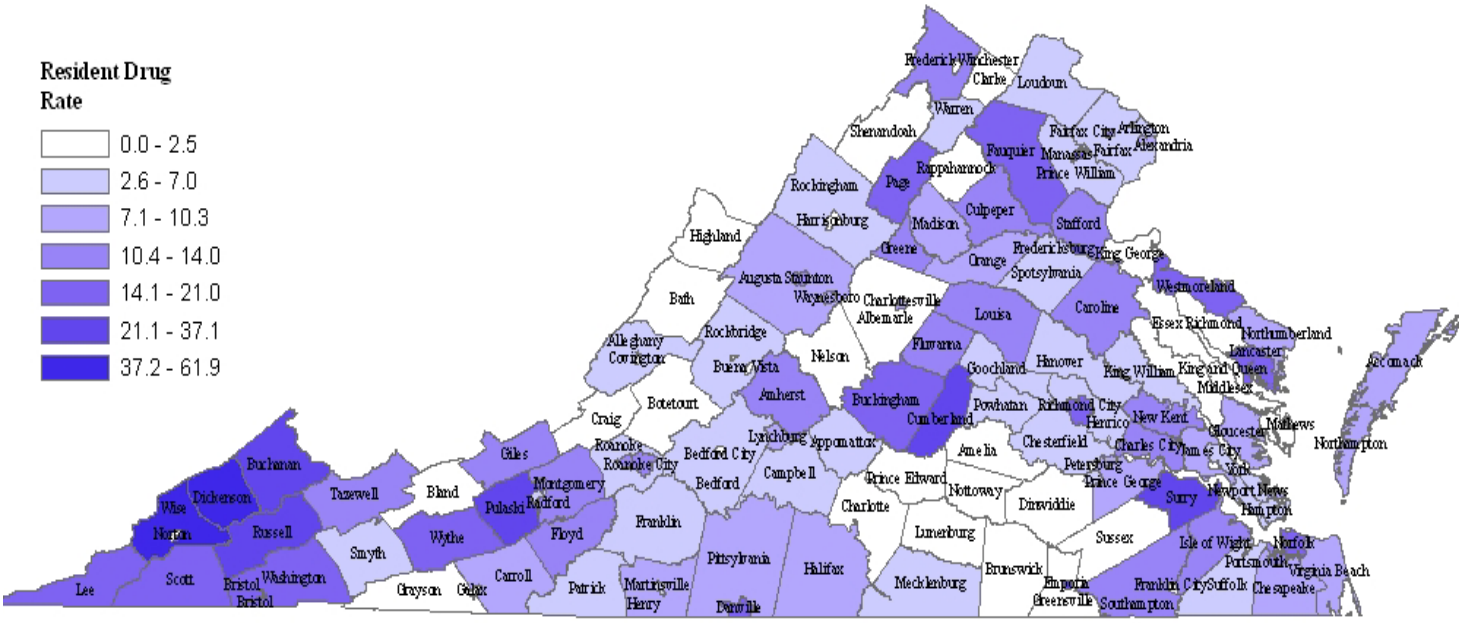


Table 39. Specific Drug Combinations Causing Death, 2007

Drug Combination	Total
Oxycodone	60
Methadone	126
Fentanyl	32
Hydrocodone	60
Oxycodone & Methadone	14
Oxycodone & Fentanyl	7
Oxycodone & Hydrocodone	21
Methadone & Fentanyl	2
Methadone & Hydrocodone	7
Fentanyl & Hydrocodone	1
Oxycodone, Methadone & Fentanyl	3
Oxycodone, Methadone & Hydrocodone	1
Oxycodone, Fentanyl & Hydrocodone	4
Other	379
Total	**717**

Table 40. Specific Drug Combinations Causing Death by Race/Ethnicity. 2007

	Race/Ethnicity			
Drug Combination	**Asian**	**Black**	**Hispanic**	**White**
Oxycodone	0	3	1	56
Methadone	0	10	1	115
Fentanyl	0	1	0	31
Hydrocodone	0	2	1	57
Oxycodone & Methadone	0	0	0	14
Oxycodone & Fentanyl	0	1	1	5
Oxycodone & Hydrocodone	0	1	0	20
Methadone & Fentanyl	0	0	0	2
Methadone & Hydrocodone	0	0	0	7
Fentanyl & Hydrocodone	0	0	0	1
Oxycodone, Methadone & Fentanyl	0	0	0	3
Oxycodone, Methadone & Hydrocodone	0	0	0	1
Oxycodone, Fentanyl & Hydrocodone	0	0	0	4
Other	5	86	8	280
Total	**5**	**104**	**12**	**596**

Table 41. Specific Drug Combinations Causing Death by OCME District, 2007

Drug Combination	OCME District			
	Central	Northern	Tidewater	Western
Oxycodone	10	16	12	22
Methadone	25	28	28	45
Fentanyl	5	6	8	13
Hydrocodone	11	11	10	28
Oxycodone & Methadone	3	3	0	8
Oxycodone & Fentanyl	1	3	1	2
Oxycodone & Hydrocodone	1	4	3	13
Methadone & Fentanyl	0	0	1	1
Methadone & Hydrocodone	0	1	2	4
Fentanyl & Hydrocodone	0	0	0	1
Oxycodone, Methadone & Fentanyl	0	1	0	2
Oxycodone, Methadone & Hydrocodone	0	1	0	0
Oxycodone, Fentanyl & Hydrocodone	0	0	0	4
Other	121	94	102	62
Total	**177**	**168**	**167**	**205**

SECTION 8: PRISONER POPULATION (N=165)

Pursuant to § 32.1-283 of the Code of Virginia, the OCME investigates deaths of persons in jail, prison, or another correctional institution, or in police custody. The OCME took jurisdiction of 165 prisoners in 2007.

- Eighty percent of the deaths were natural.
- Ninety-four percent were male and 48.5 percent were white.

Figure 82. Proportion of Prisoner Deaths by Manner of Death, 2007

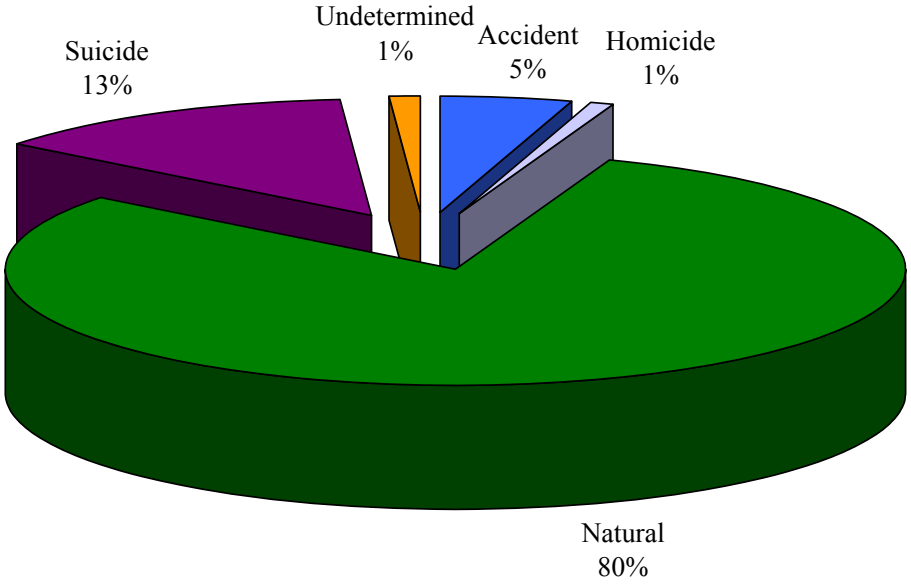


Figure 83. Proportion of Prisoner Deaths by Race/Ethnicity, 2007

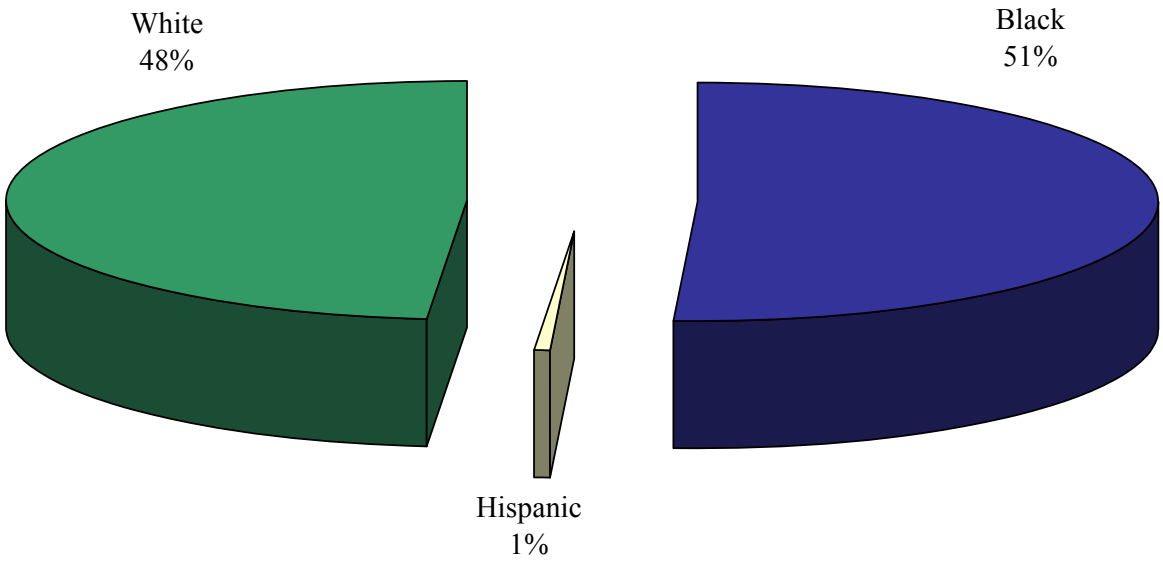


Figure 84. Total Prisoner Deaths by Age Group by Gender, 2007

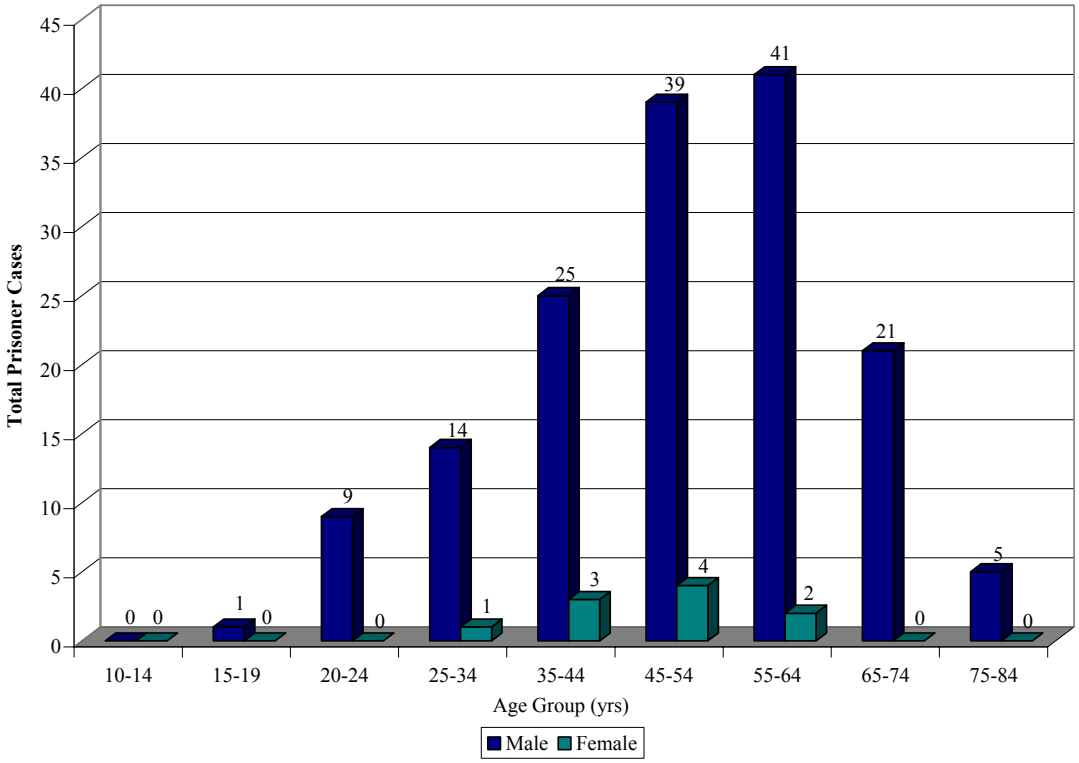


Figure 85. Total Prisoner Deaths by Manner of Death by Race/Ethnicity, 2007

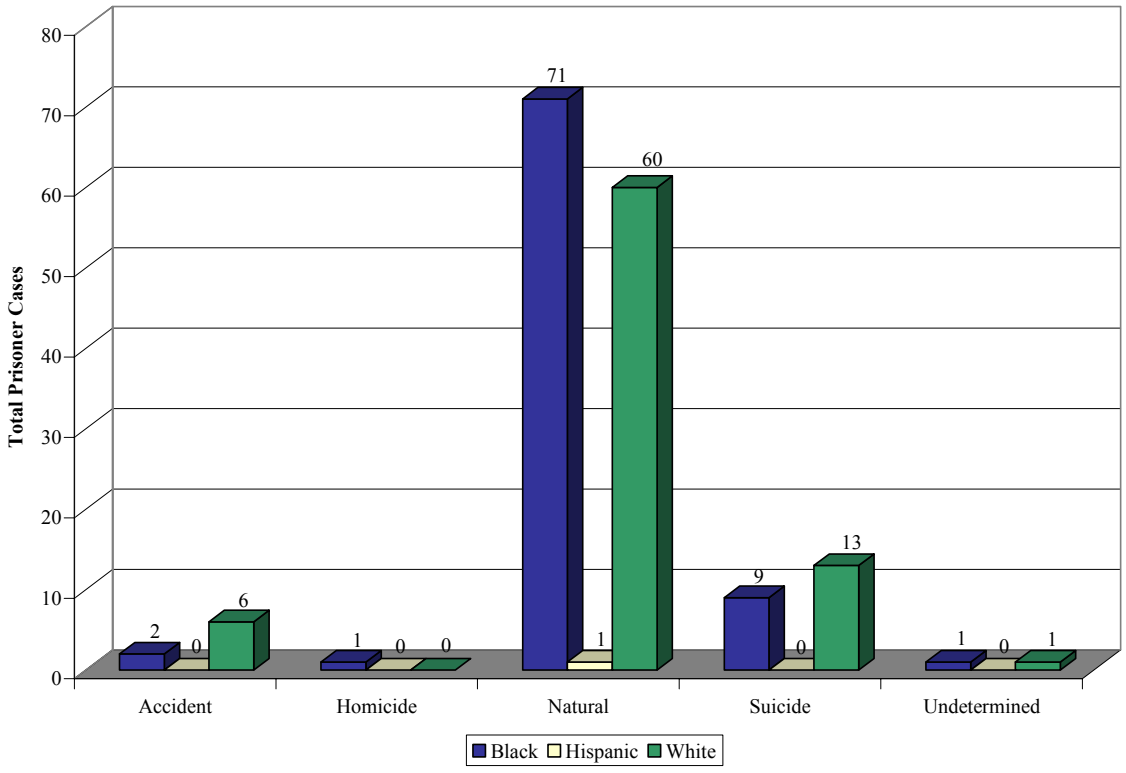


Table 42. Total Prisoner Deaths by Cause of Death, 2007

Natural Deaths	Total Cases	Autopsied
Pulmonary Diseases/Disorders	**28**	**14**
Asthma	1	1
COPD	3	1
Emboli	1	1
Pneumonia	5	3
Pulmonary Malignancy	18	8
Central Nervous System Diseases/Disorders	**8**	**6**
Seizure Disorder	1	1
Vascular Disease	5	3
Degenerative Disease	1	1
Other CNS Disease/Disorder	1	1
Cardiovascular Diseases/Disorders	**44**	**35**
Atherosclerosis	20	12
Hypertension	14	13
Atherosclerosis & Hypertension	9	9
Other Cardiac Disease/Disorder	1	1
Gastrointestinal Diseases/Disorders	**24**	**12**
GI Hemorrhage	1	0
Cirrhosis	4	3
Chronic Ethanolism	1	1
Hepatitis	3	0
GI Malignancy	13	7
Other GI Disease/Disorder	2	1
Genitourinal Diseases/Disorders	**4**	**2**
Renal Disease	3	2
Genitourinal Malignancy	1	0
Systemic Diseases/Disorders	**18**	**9**
Blood Disorders	3	0
Diabetes	1	1
AIDS/HIV	8	4
Sepsis	2	1
Metastatic Malignancy Unknown Primary	3	2
Other Systemic Disease/Disorder	1	1
Other Natural Diseases/Disorders	**6**	**5**
Other Malignancy	6	5
Natural Subtotal	**132**	**83**

continued

Unnatural Deaths	Total Cases	Autopsied
Asphyxia	**23**	**22**
Choking (Aspiration: Food or Foreign Object)	1	1
Hanging	22	21
Blunt Force Injuries	**3**	**3**
Head/Neck	1	1
Chest	1	1
Abdomen	1	1
Penetrating Injuries	**1**	**0**
Stab	1	0
Substance Abuse	**5**	**3**
Illegal (Street) Drug Poisoning	2	1
Mixed Category Drug Poisoning	3	2
Unnatural Subtotal	**32**	**28**
Undetermined Deaths	**Total Cases**	**Autopsied**
Undetermined After Autopsy and/or Investigation	**1**	**1**
Other Undetermined	1	1
Undetermined Subtotal	**1**	**1**
TOTAL	**165**	**112**

SECTION 9: RECOVERED UNREPORTED CASES (N=110)

Recovered unreported cases are those cases that the OCME investigates retrospectively. At times, medical care providers or death reporters misunderstand what type of case falls under the jurisdiction of the OCME and do not refer a case to the OCME. The OCME typically learns about these cases from VHD's Division of Vital Records, funeral homes, or local medical examiners.

While these 110 cases are in the annual report reflective of calendar year 2007, retrospective cases may have been deaths from other years but the OCME investigation began in 2007.

Figure 86. Proportion of Retrospective Cases by Manner of Death, 2007

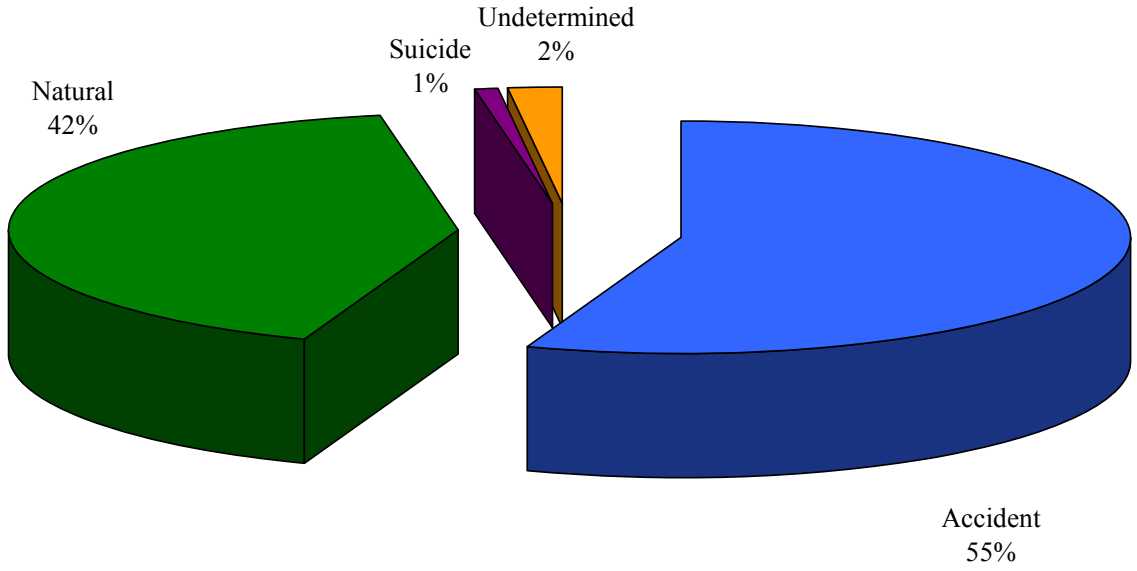


Figure 87. Proportion of Retrospective Deaths by Race/Ethnicity, 2007

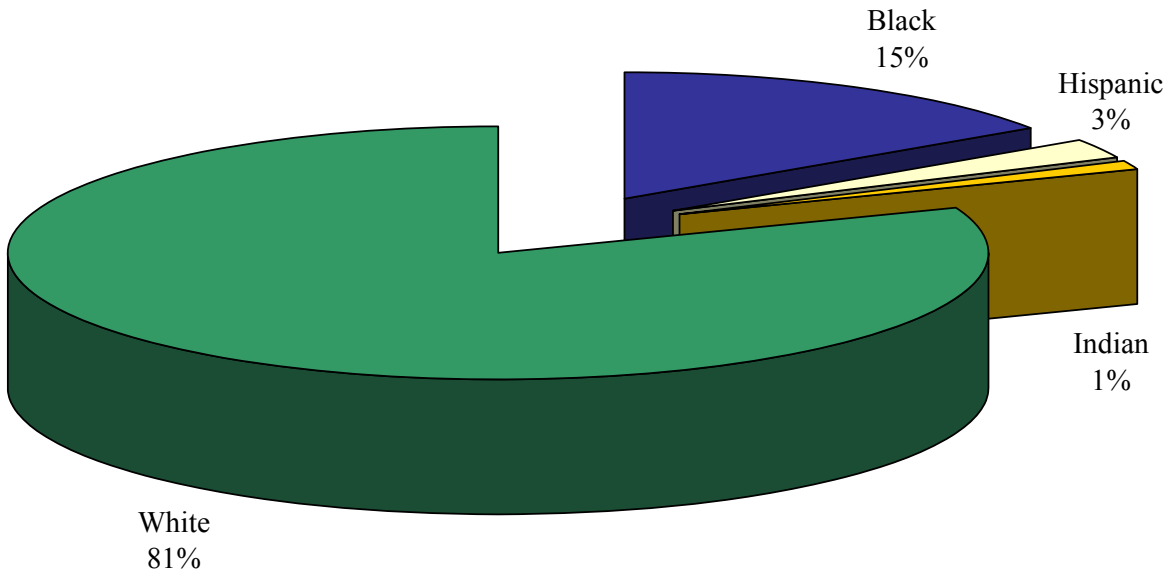


Figure 88. Total Retrospective Deaths by Age Group by Gender, 2007

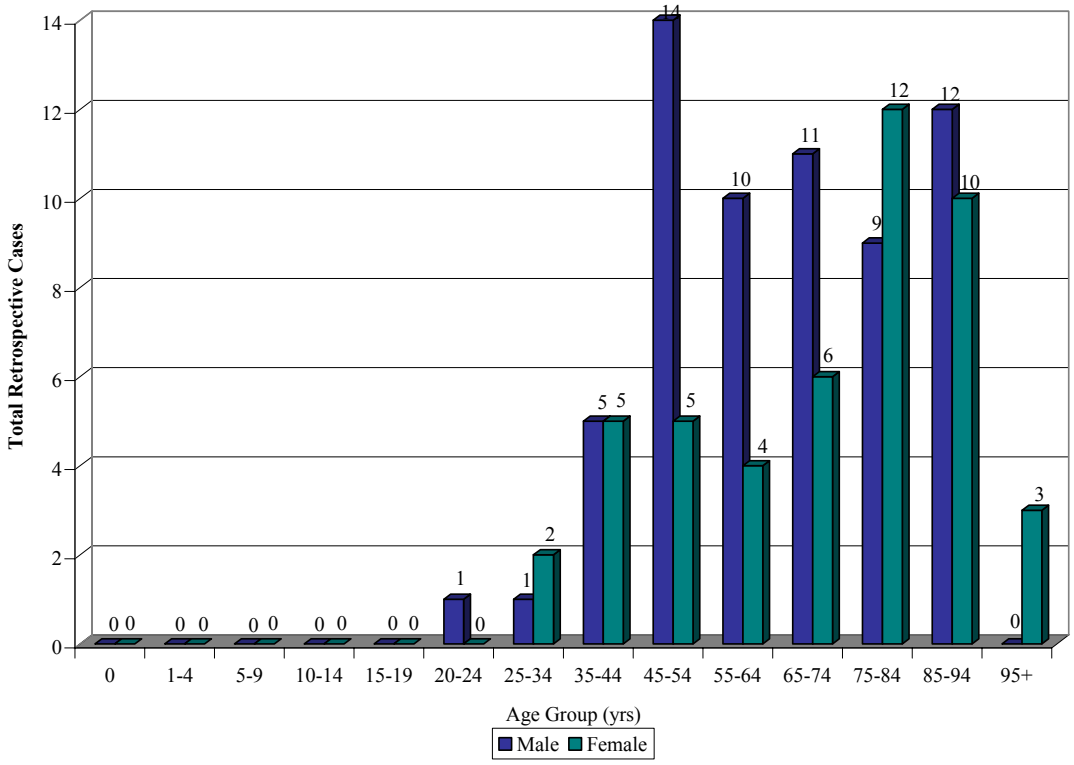


Table 43. Total Retrospective Deaths by Method of Death and by Classification of Death

Method of Death	Cases
Asphyxia	
Aspiration/Café Coronary	2
Drowning	1
Exposure-Heat	1
Fall	36
Falling Object	2
Other	1
Poisoning	
Drugs, Other poisons	2
Undetermined	2
Vehicular	
Bicycle	1
Car	10
Motorcycle	1
Sport Utility Vehicle	2
Unknown	3
Total	**64**
Death Classification	
Natural Deaths	46
Unnatural Deaths	64
TOTAL DEATHS	**110**

GLOSSARY

Accident – The *manner of death* used when, in other than *natural deaths*, there is no evidence of intent; an undesigned, sudden, and unexpected death

Assistant Chief Medical Examiner – A forensic pathologist who has the duty of performing autopsies and investigating deaths that fall under the *jurisdiction* of the *Office of the Chief Medical Examiner*, and determining *cause* and *manner of death*.

Autopsy – A detailed postmortem external and internal examination of a body to determine cause of death, collect evidence, determine the presence or absence of injury.

Cause of Death – The disease, injury, or poison that results in a physiological derangement or biochemical disturbance that is incompatible with life. The result of post-mortem examination, including autopsy and toxicological findings, combined with information about the medical history of the decedent serves to establish the *cause of death*.

Chief Medical Examiner – The head of the *Office of the Chief Medical Examiner*. The Chief Medical Examiner must be a forensic pathologist licensed to practice medicine in Virginia and may appoint *Assistant Medical Examiners* who are forensic pathologists, and *Local Medical Examiners*.

Children – Individuals 17 years of age or younger.

County/City of Death – The county/city where the death occurred. The county/city where the decedent legally resided, the county/city where the decedent was fatally injured, and the county/city where the decedent died may be the same or different.

County/City of Residence – The county/city where a person legally resides. If not a resident of Virginia, the decedent is listed as "out of state".

Drug Caused Death – A death caused by a drug or combination of drugs.

Ethanol – An alcohol, which is the principal intoxicant in beer, liquor, and wine. A person with an alcohol concentration in blood of 0.08 percent by weight by volume (0.08%) is legally intoxicated in Virginia.

Ethanol Present – Deaths in which toxicological tests reveal a reportable level of *ethanol* (0.01% W/V or greater) at the time of death.

Homicide – The *manner of death* in which death results from the intentional harm of one person by another.

Jurisdiction – The extent of the Office of the Chief Medical Examiner's authority over deaths. The OCME authority covers every death which is due or which might reasonably have been due to a violent or traumatic injury or accident, or is of public health interest which will be investigated by the Medical Examiner.

Local Medical Examiner – A physician appointed by the *Chief Medical Examiner* for a city or county to assist in the investigation of deaths and determine *jurisdiction* of the Office of the Chief Medical Examiner. There is a local medical examiner in most counties in Virginia.

Manner of Death – The general category of the circumstances of the event which causes the death. The categories are *accident, homicide, natural, suicide,* and *undetermined*.

Method of Death – The means, fatal agency or item causing death present at the time of injury or death.

Motor Vehicle Collision Related Death – A death involving a motor vehicle. Motor vehicles include automobiles, vans, motorcycles, trucks, aircraft, and trains. The decedent is usually a driver of, a passenger in, or a pedestrian who is struck by a motor vehicle. The death of a bicyclist that is struck by a motor vehicle is considered to be a motor vehicle related death.

Natural – The *manner of death* used when solely a disease causes death. If death is hastened by an injury, the *manner of death* is not considered natural.

Office of the Chief Medical Examiner – The office in the Virginia Department of Health that is responsible for the investigation of sudden, violent, or unexpected death.

Opiate – A class of drugs, including morphine, codeine, and heroin, derived from the opium poppy plant (*Papaver somniferum*).

Stimulant – A class of drugs, including cocaine and oral and indictable amphetamines, whose principal action is the stimulation of the central nervous system.

Sudden and Unexpected Infant Death – A diagnosis designated for infants under the age of 1 year. Sudden and Unexpected Infant Death (SUID) is a diagnosis made in cases in which autopsy does not reveal a definitive medical or traumatic cause of death and the circumstances surrounding the death suggest that there is an associated risk factor for dying, such as unsafe bedding or co-sleep, or some other external factor, but the contribution of this factor cannot be determined with certainty. The diagnosis may also be used in the situation where a medical disease is identified, but it is uncertain that this disease caused death. The cause of death in suspected but not proven homicides would be undetermined.

Sudden Infant Death Syndrome –Sudden Infant Death Syndrome (SIDS) is defined as the sudden death of an infant less than one year of age that cannot be explained after a thorough investigation is conducted, including a complete autopsy, examination of the death scene which includes no external risk factors, and review of the clinical history.

Suicide – The *manner of death* in which death results from the purposeful attempt to end one's life.

Undetermined – The *manner of death* for deaths in which there is insufficient information to assign another manner. An undetermined death may have an undetermined cause of death & an unknown manner, an undetermined cause of death and a known manner, or a determined cause of death and an unknown manner.

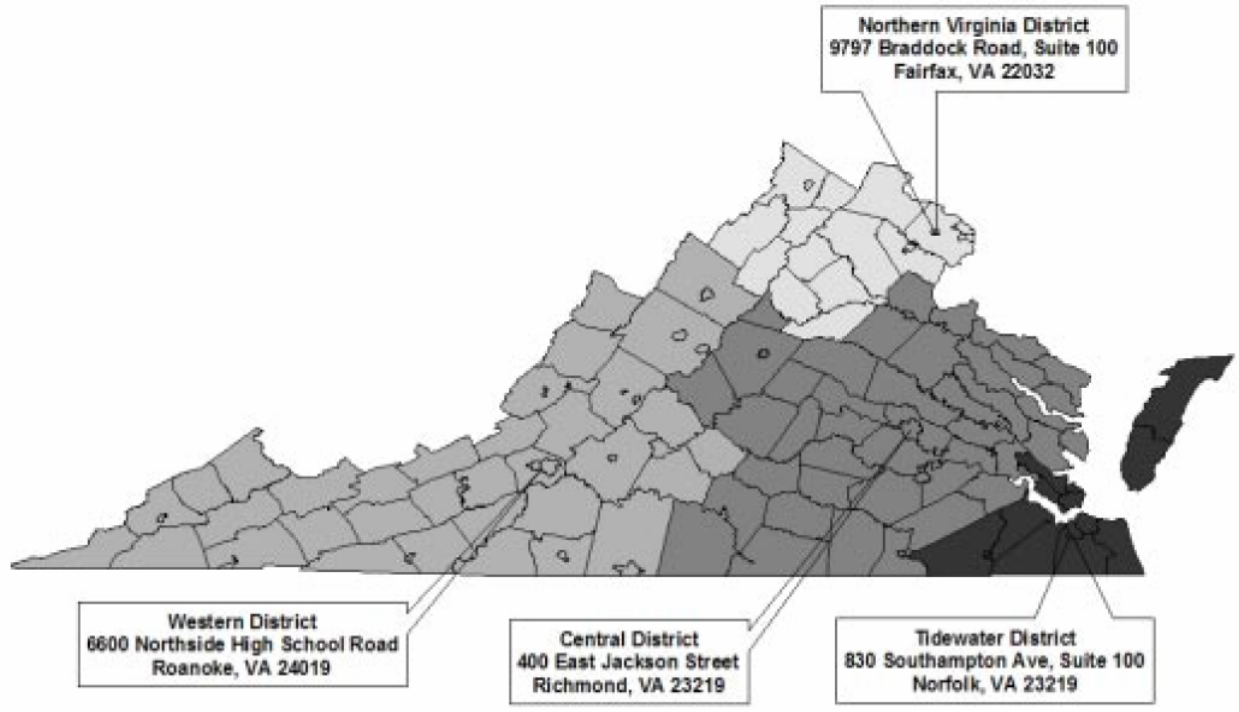
MEDICAL EXAMINER DISTRICTS

CENTRAL *Counties* of Albemarle, Amelia, Brunswick, Buckingham, Caroline, Charles City, Charlotte, Chesterfield, Cumberland, Dinwiddie, Essex, Fluvanna, Gloucester, Goochland, Greene, Greensville, Halifax, Hanover, Henrico, James City, King and Queen, King George, King William, Lancaster, Louisa, Lunenburg, Mathews, Mecklenburg, Middlesex, Nelson, New Kent, Northumberland, Nottoway, Powhatan, Prince Edward, Prince George, Spotsylvania, Stafford, Surry, Sussex, Richmond, and Westmoreland. *Cities* of Charlottesville, Colonial Heights, Emporia, Fredericksburg, Hopewell, Petersburg, Richmond, South Boston, and Williamsburg.

NORTHERN *Counties* of Arlington, Clarke, Culpeper, Fairfax, Fauquier, Frederick, Loudoun, Madison, Orange, Page, Prince William, Rappahannock, Shenandoah, and Warren. *Cities* of Alexandria, Arlington, Fairfax, Falls Church, Manassas, Manassas Park, and Winchester.

TIDEWATER *Counties* of Accomack, Isle of Wight, Northampton, Southampton, and York. *Cities* of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, and Virginia Beach.

WESTERN *Counties* of Alleghany, Amherst, Appomattox, Augusta, Bath, Bedford, Bland, Botetourt, Buchanan, Campbell, Carroll, Craig, Dickenson, Floyd, Franklin, Giles, Grayson, Henry, Highland, Lee, Montgomery, Patrick, Pittsylvania, Pulaski, Roanoke, Rockbridge, Rockingham, Russell, Scott, Smyth, Tazewell, Washington, Wise, and Wythe. *Cities* of Bedford, Bristol, Buena Vista, Covington, Danville, Galax, Harrisonburg, Lexington, Lynchburg, Martinsville, Norton, Radford, Roanoke, Salem, Staunton, and Waynesboro.



Additional copies of this report are available at the following website:
http://www.vdh.virginia.gov/medExam/Reports.htm

Or by contacting:

Commonwealth of Virginia
Virginia Department of Health
Office of the Chief Medical Examiner
400 E. Jackson Street
Richmond, VA 23219
(804)786-3174

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment