

OFFICE
OF THE
MEDICAL EXAMINER
ANNUAL REPORT
2008

INTRODUCTION

The Office of the Medical Examiner is a division of the Erie County Department of Health, under the direction of the Commissioner of Health. The office is organized into three sections: Pathology, Field Investigation and Laboratory, the last of which encompasses Forensic Toxicology and Histology. The office is headed by 3 board certified forensic pathologists, the Chief, 2 Deputy Chiefs, an Associate Chief Medical Examiner, and an Administrative Coordinator. Our Medical Investigator System is comprised of two Medical Investigators and five scene investigators, staffing the office on a continuous basis. An accredited Forensic Toxicology laboratory is affiliated with and located within the Office of the Medical Examiner and is staffed by a Chief County Toxicologist and six toxicologists. Staff also includes one Laboratory Assistant (Histologist), three Pathological Lab Workers (Autopsy Technicians) and two administrative/clerical personnel.

As mandated by law, the Office of the Medical Examiner is responsible for investigating the death of any person who dies within Erie County as a result of “criminal violence, or neglect, or by casualty or by suicide, or suddenly when in apparent health, or when unattended by a physician, or a person confined in a public institution other than a hospital, infirmary or nursing home, or in any suspicious or unusual manner.”¹ It is the responsibility of the office to generate death certificates as to cause and manner of death. Cause of death is anything that results in the cessation of life functions in an individual. Manner of death refers to the way death occurs and is classified as natural, accident, homicide, suicide or undetermined. Full forensic autopsies routinely include an initial investigation, external and internal examination, toxicology and histology. At times, partial directed autopsies or inspections (external examinations) with or without toxicology are performed. The office has entered into agreements with Niagara, Chautauqua and Cattaraugus Counties for forensic autopsy services, and Chautauqua, Cattaraugus and Jefferson Counties for forensic toxicology assistance.

The office participates in training programs for multiple health and human services programs within the area colleges and universities. SUNY at Buffalo medical residents, third and fourth year medical students, fourth year dental students and undergraduates in related fields of study spend from weeks to months training in-house. Buffalo State Forensic Chemistry students, Hilbert College Forensic Science and Criminal Justice students, and EMT students also train at our facility.

The information collected during each death investigation, is archived in the medical examiner data system, Justice Trax R PathAssistTM. This data is used to generate statistics to study death trends for Erie County residents and compare our community to the general population.

¹ McKinney’s Consolidated Laws of New York Annotated County Law, Chapter 11 of the Consolidated Laws, Article 17-A-Coroner, Coroner’s Physician and Medical Examiner, NY County § 673.

EXPLANATION OF DATA ACQUISITION

In 2008, there were approximately 9431 deaths in Erie County. In the same year, 2713 cases² were reported to the Office of the Medical Examiner. Deaths were certified by private physicians in 1444 persons. Our office assumed jurisdiction either by county law or contract in 1079 of the cases reported, of which a full or partial autopsy was performed in 888 persons (82%), 615 of whom died in Erie County and 273 of whom died in Niagara, Chautauqua or Cattaraugus counties. An external examination with or without toxicology was performed in 161 cases (15%) of which 8 were non-human bones. Death certificates for 31 persons (3% of cases) were co-signed with an attending or primary care physician.

For this report, we analyzed the data by *manner of death, age, gender, race, and month of the year*.

The manner of death was classified as follows: natural, accident, homicide, suicide and undetermined. Manner of death classification followed “A Guide for Manner of Death Classification” issued by the National Association of Medical Examiners (NAME) in 2002.³ The following definitions are verbatim from that document:

- Natural deaths are due solely or nearly totally to disease and/or the aging process.
- Accident applies when an injury or poisoning causes death and there is little or no evidence that injury or poisoning occurred with intent to harm or cause death. In essence, the fatal outcome was unintentional.
- Suicide results from an injury or poisoning as a result of an intentional, self-inflicted act, committed to do self harm or cause the death of one’s self.
- Homicide occurs when death results from a volitional act committed by another person to cause fear, harm, or death.
- Undetermined or “could not be determined” is a classification used when the information pointing to one manner of death is no more compelling than one or more other competing manners of death in thorough consideration of all available information.

² Co-sign cases (31), storage cases (112), hospital cases (2) and Toxicology-only cases (76) were included in this total. Out of county cases usually received a full autopsy. Comparisons of the manner of death and manner of death by gender among counties are presented in a separate report.

³ Hanzlick, Randy, MD, Hunsaker III, John C., MD, JD, Davis, Gregory J., MD, “A Guide For Manner of Death Classification,” First Edition, National Association of Medical Examiners ®

Natural causes of death are subclassified as cardiovascular, pulmonary, liver, neurological, gastrointestinal, genito-urinary, infectious, cancer, metabolic, autoimmune, genetic and deaths in infancy.

The methods of accidental deaths are subclassified as transportation (motor vehicle collisions [MVC]), falls, gunshot wounds, asphyxia, drugs, drowning, fire/carbon monoxide (CO), environmental, surgical misadventures and other. Transportation is further subdivided into auto, pedestrian, motorcycle and other. Falls are further subdivided into 'from a height' and ground level. Asphyxial deaths are further subdivided into auto-erotic, mechanical/chemical, child (overlay/co-sleeping) and food-related (e.g. choking).

The methods of suicidal deaths are subclassified as asphyxia, drugs, gunshot wounds, blunt force injury, sharp force injury and thermal injury. Asphyxial deaths are further subdivided into hanging, carbon monoxide, drowning and other gas. Blunt force injury is further subdivided into jumps from motor vehicles or a height.

The methods of homicidal deaths are subclassified as gunshot wounds, blunt force injury, sharp force injury, strangulation, multiple (combination of above) and other.

The bulk of cases in the undetermined category include deaths due to advanced decomposition and drug overdose where circumstances surrounding death are often minimal. As the term implies, this category includes cases that defy placement in one or another manner of death category.

Selected aggregate statistical information is provided in the tables that follow.

GENERAL OVERVIEW

Figure 1 shows that for those persons falling within the Erie County Medical Examiner's Office jurisdiction in 2008, deaths were natural in 45%, accidental in 31%, homicidal in 5%, suicidal in 11% and in 8% the manner of death was undetermined. Thus, almost half of the deaths were of natural causes and there were more accidental deaths than all three of the other categories combined. Suicides outnumbered homicides. The large percentage (8%) of undetermined deaths stems from the inclusion of drug overdoses in this category (see figure 10a). While some counties classify deaths due to drug overdose as accidental, our policy is to classify them as undetermined in that the intent of the drug user is typically unknown.

Figure 2 shows a breakdown of death by manner and gender. Males outnumber females in our caseload by over two times (data not shown). In all categories male deaths outnumber female deaths. This is strikingly so except in the undetermined category (see undetermined death overview).

Figure 3a shows a breakdown of death by manner and race. Whites outnumber blacks in our caseload by approximately 3-1/4 times (data not shown). Figures 3b and 3c present another view of these data for white and black populations only. Homicidal deaths are most frequent in blacks. For all other manners, whites outnumber other races. The latter reflects the demographics of Erie County where the approximate percentages of the population are Whites 75%, Blacks 21%, Hispanic 2%, Asian 1% and Other 1%⁴. Our data agree with the national trend that more whites die by their own hands (suicide) and blacks die at the hands of another (homicide). A disproportionate number of blacks also die of natural deaths [ratio of 40% black: white versus 16% black: white in the Erie County *population* demographics]. While no direct conclusions can be drawn from these ratio disparities and the causes are undoubtedly multifactorial, it can be noted that the poverty levels in the city of Buffalo are some of the highest in the nation⁵. Within the county, the city of Buffalo has the highest black population (see city demographics and reference below)⁶.

Figure 4 shows a breakdown of death by manner and age. The majority of our cases were drawn from the middle-aged population ranging from 36-65 years. The high numbers of persons over age 66 included in our caseload may represent the negative population growth in our area. Accidents were the most common manner of death in those < 35 years of. In contrast, persons over age 35 most often died of natural diseases. Accidental deaths spike in two age brackets – over 76 years and 46-55 years. As the graph reflects, most persons over the age of 65 years died either naturally or by accident. While falls are very common in the elderly, lack of health care (no insurance, no primary care physician) and/or isolation (unattended deaths) might contribute to the number of persons referred to our office that we subsequently determine to have died naturally.

Figure 5 shows a breakdown of death by manner and month of the year. In 2008, the peak number of deaths occurred in October, coinciding with the greatest number of natural deaths. There were more deaths in the latter 6 months of the year than in the first 6 months. In our county, suicidal deaths were at their lowest in September. There was a slight trend for homicidal deaths to increase in the summer months.

⁴ www.muninetguide.com/states/New-York/Erie.php

⁵ <http://www.census.gov/prod/2008pubs/acs-09.pdf>

⁶ (Whites 51.8%, Blacks 37.2%, Hispanic 7.5%, Asian 1.4% and Other 1.3%) www.muninetguide.com/states/New-York/municipality/buffalo.php

Figure 1
All 2008 Deaths in Erie County

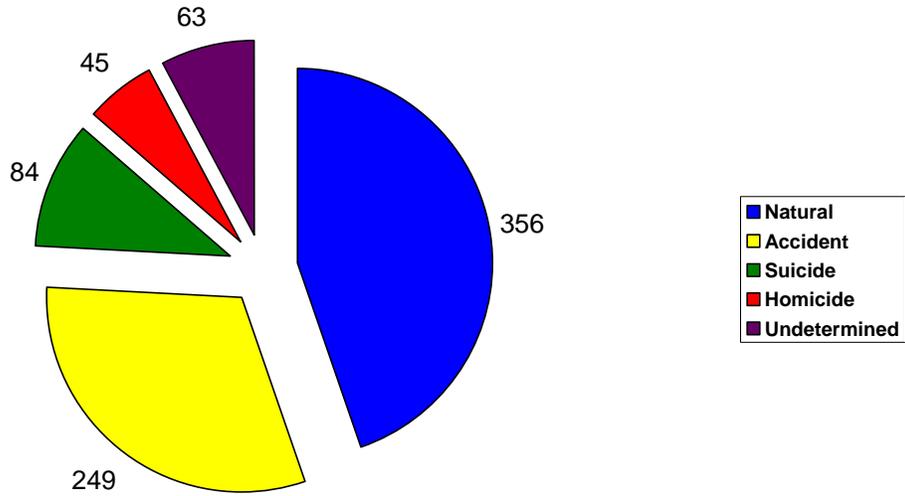


Figure 2
2008 Manners of Death by Gender in Erie

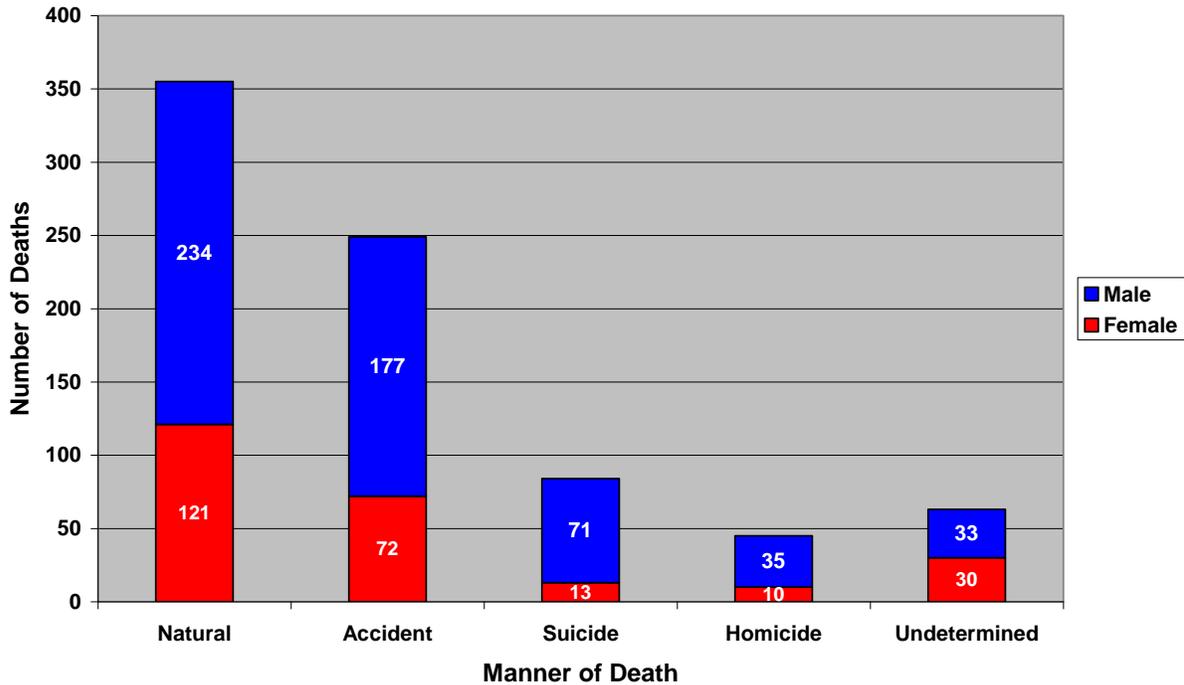


Figure 3a

2008 Manners of Death by Race in Erie

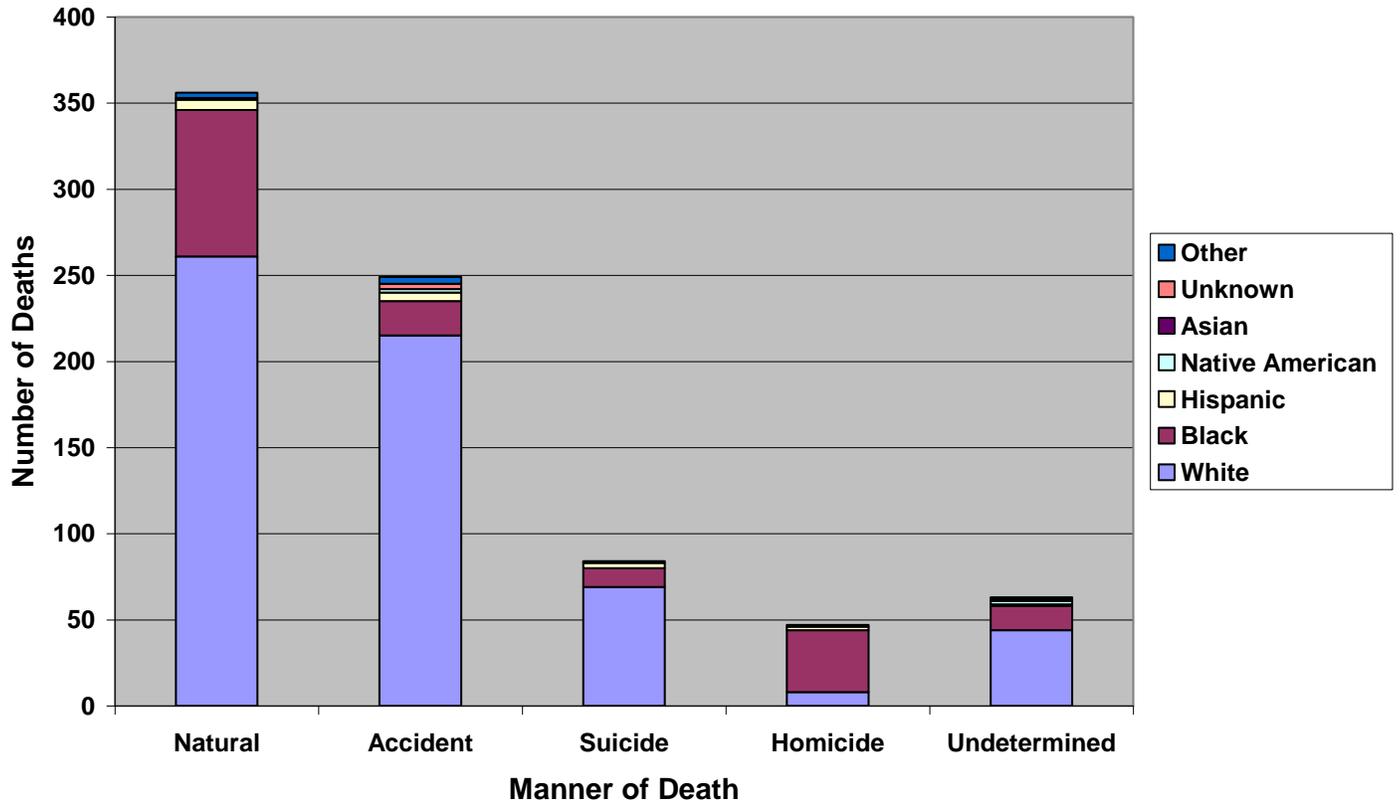


Figure 3b

Race (White) by Manner in 2008

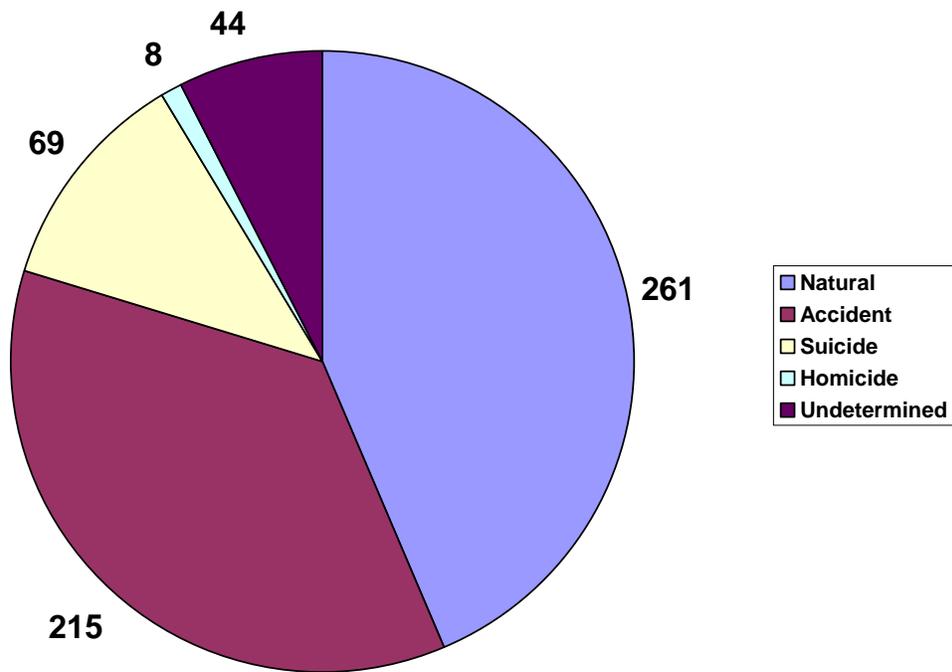


Figure 3c

Race (Black) by Manner in 2008

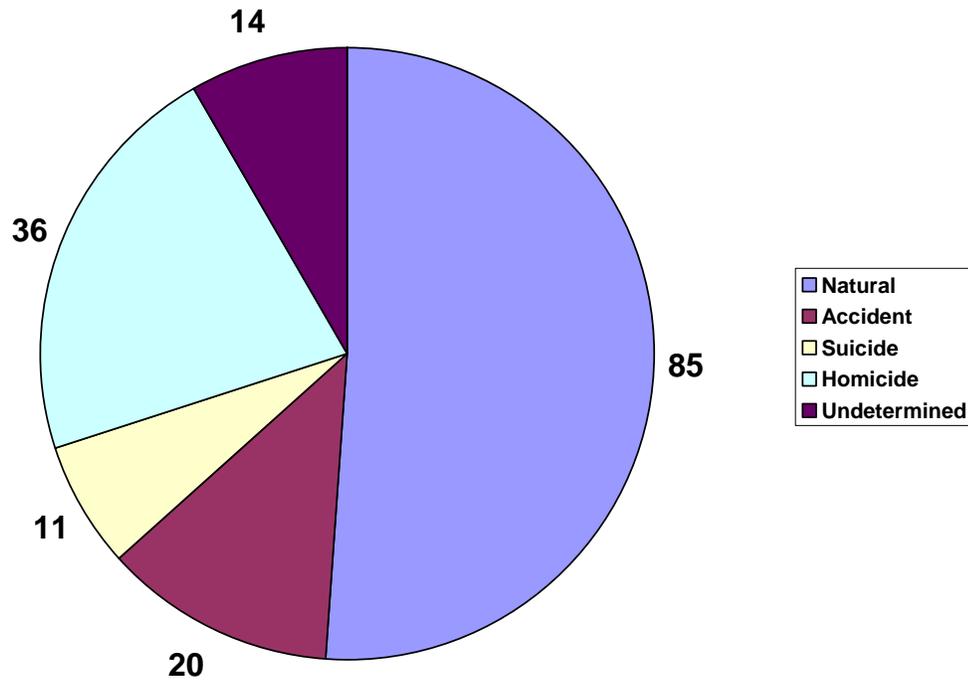


Figure 4

2008 Deaths in Erie County by Manner and Age

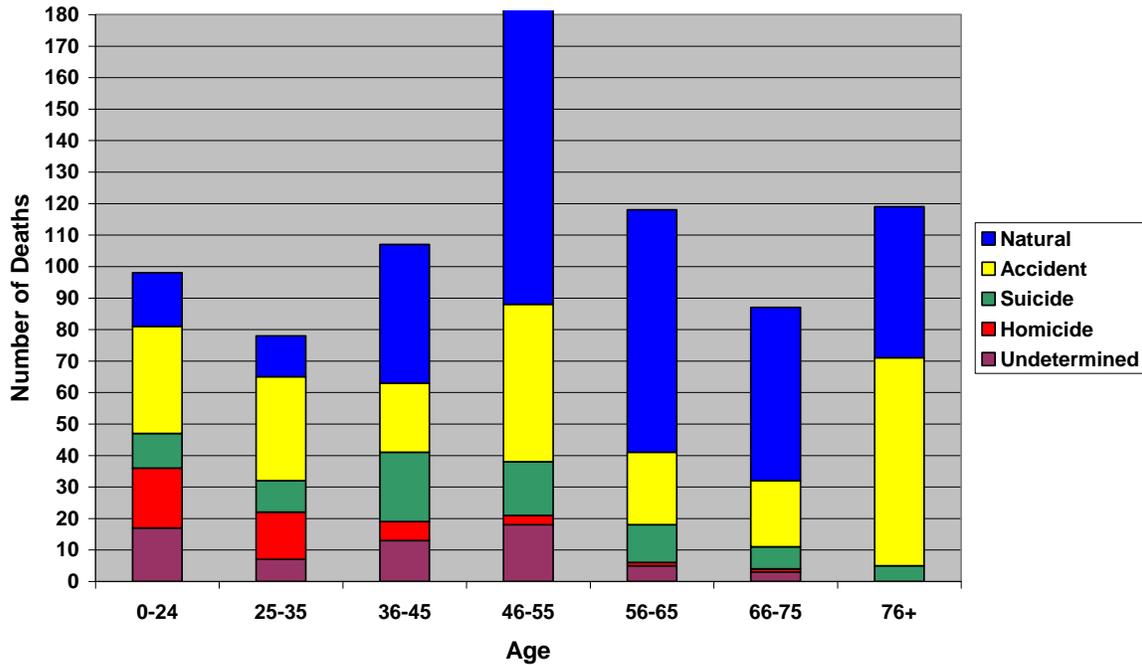
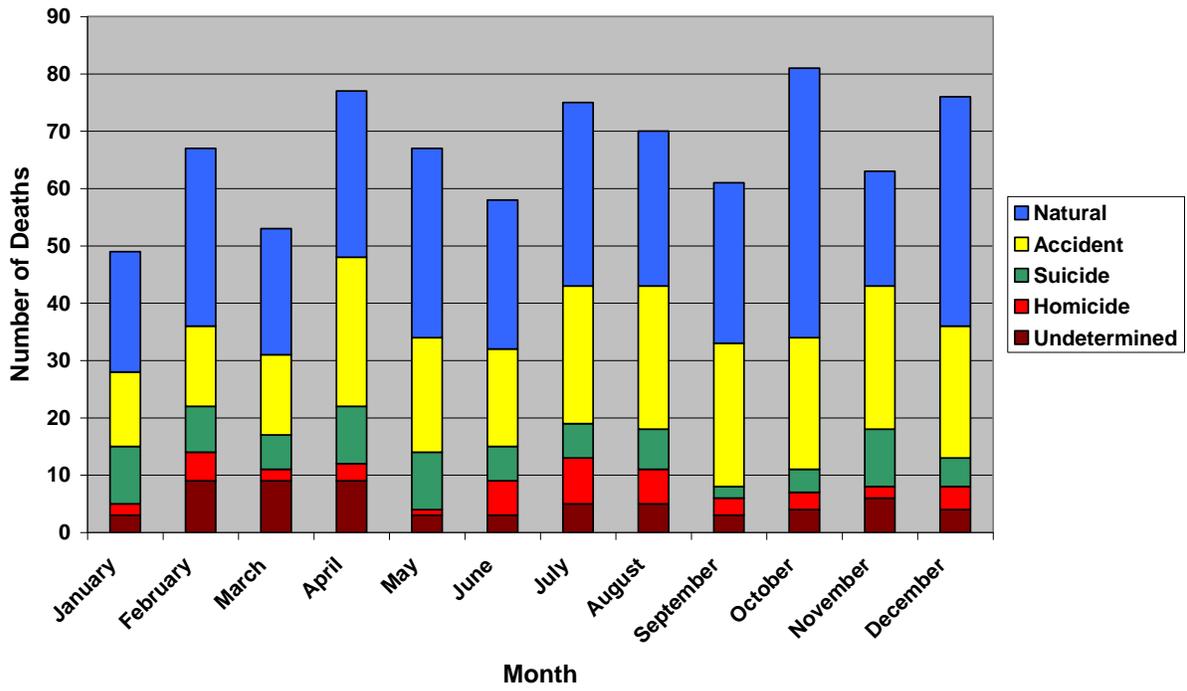


Figure 5

2008 Manner of Deaths In Erie County by Month



NATURAL DEATH OVERVIEW

The statistics generated by our office are not representative of all natural deaths occurring in Erie County because of the bias inherent in the types of cases referred to our office. Thus, natural deaths investigated by our office are those that are sudden, unexpected, unexplained or unattended. Often these persons were not under the care of a primary physician, had not seen a physician in over a year or the physician could not give a reasonable cause of death.

The compilation of data in figures 6a-6c gives an overview of natural deaths categorized by disease type/organ system, age and gender. Cardiovascular disease is the major underlying natural cause of death in our population regardless of sex or age > 25 years. As shown in 6a about seventeen times more persons died of cardiovascular disease than either of the next most common disease categories (neurological and pulmonary). Liver disease affected males and females primarily between the ages of 36-75 years. Infectious causes of death were present in low numbers in almost all age groups. Cancer deaths occurred in age categories of 46-65 years and also 76+ years. In contrast to our older population, cancer is more likely to be diagnosed at the time of death in children or young adults, thus excluding them from our caseload. Even though diagnosed with terminal cancer, autopsy is mandatory in the prison population who make up a large percentage of cases within this category. Pulmonary deaths occurred fairly frequently in the 36 to 65 year brackets. Of course, Sudden Infant Death Syndrome (SIDS) and related deaths were confined to our lowest age bracket; further analyses of these data will be provided in subsequent annual reports.

Our gender analyses show males outnumbering or about equaling females in all categories of natural death.

Figure 6a

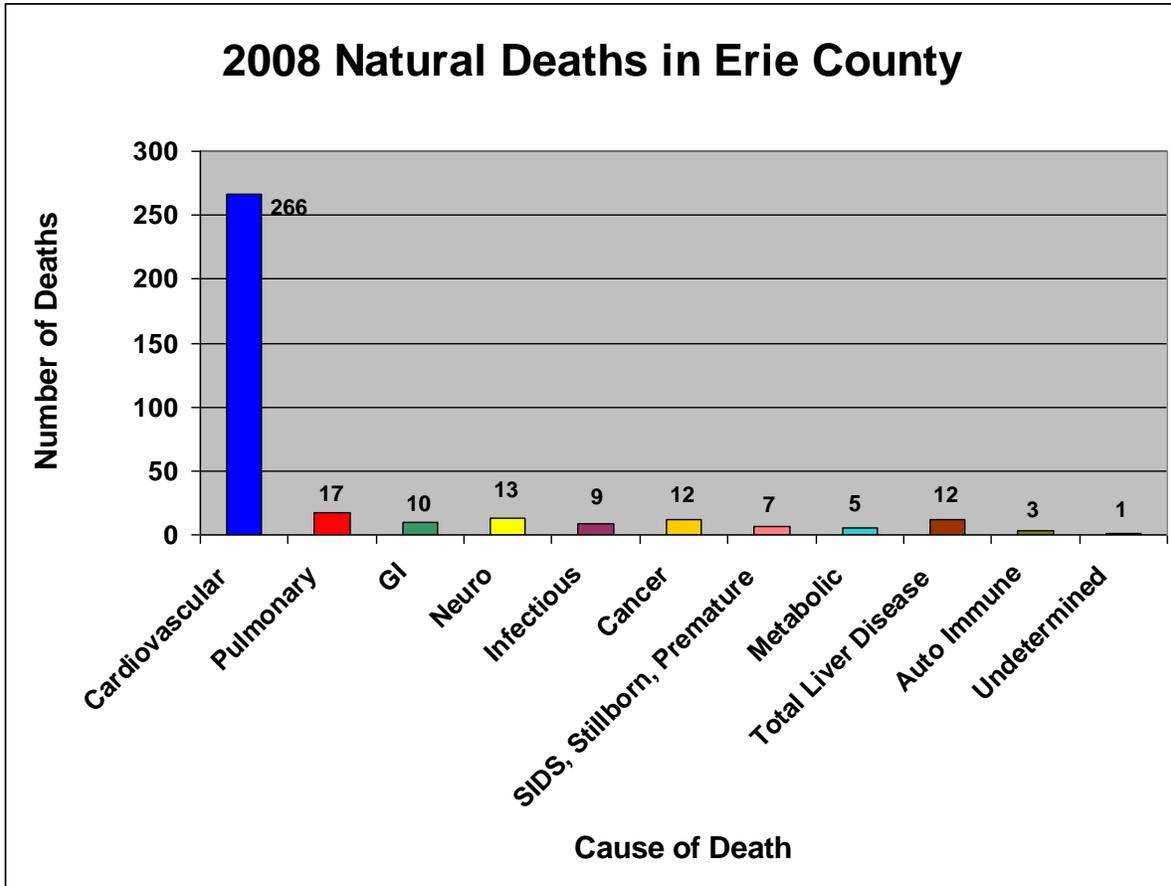


Figure 6b

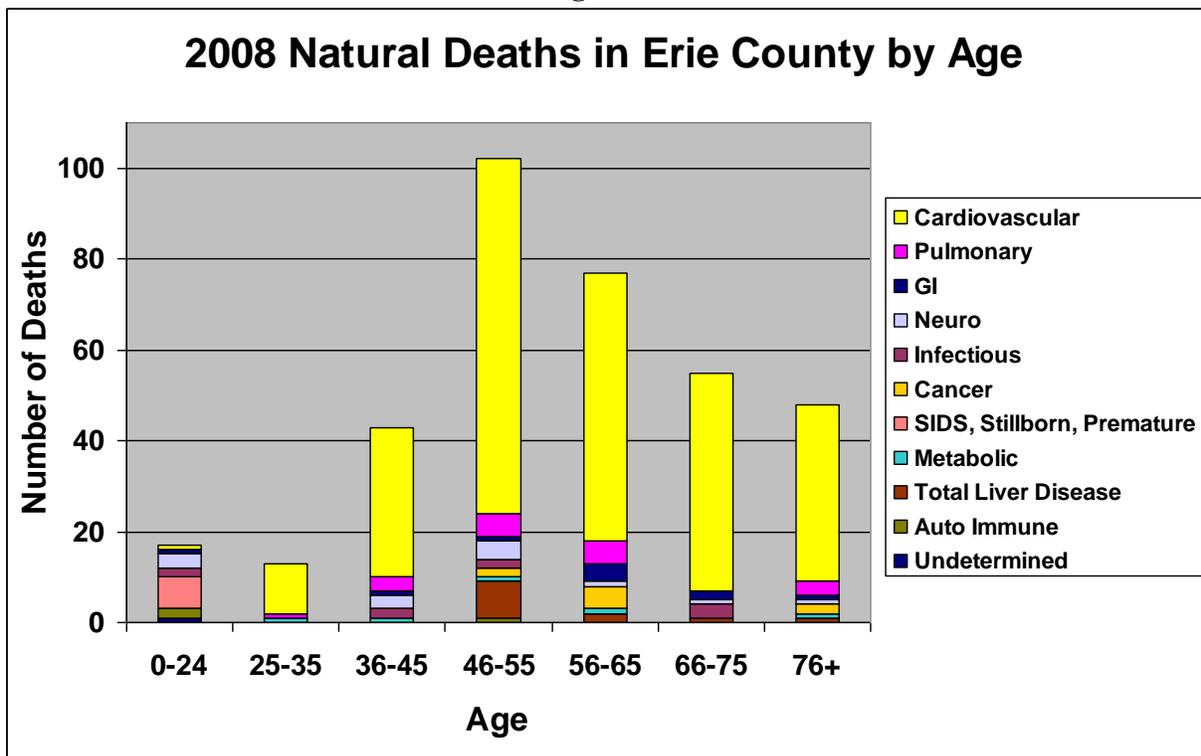
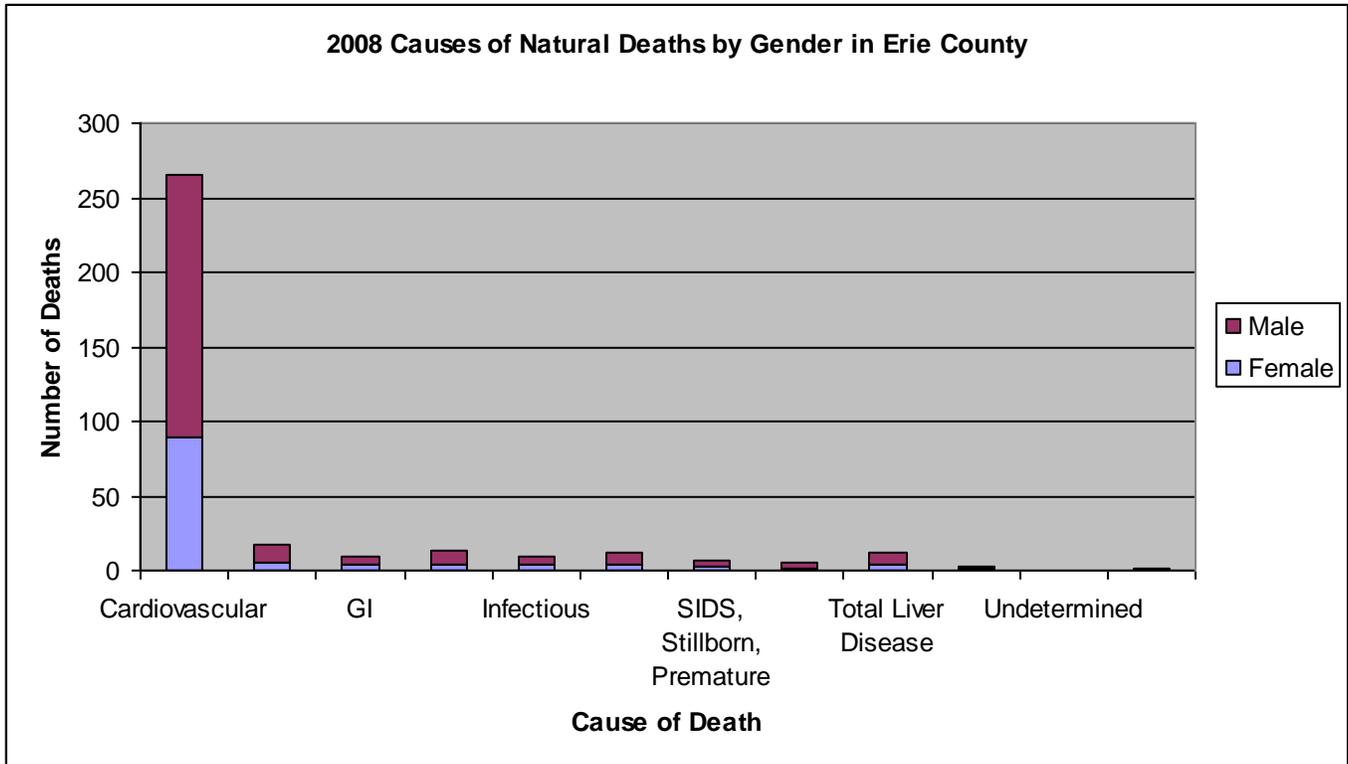


Figure 6c



ACCIDENTAL DEATH OVERVIEW

The compilation of data in figures 7a-7c gives an overview of accidental deaths categorized by type, age and gender. The most common accidental manner of death resulted from 'motor vehicle collisions'. These include pedestrian deaths as well as all other types of transportation deaths. Total falls comprised the second most common accidental cause of death – only 4% fewer than the total MVC category. Asphyxial deaths, if taken together to include not only autoerotic, mechanical, chemical, positional, co-sleeping and choking (total asphyxia) but also drowning and carbon monoxide intoxication would make up the next largest overall category of accidental death.

As shown in figure 4 and further illustrated in figure 7b accidental deaths peaked in two age brackets – the over 76 years, and 46-55 years. Drugs contributed significantly to the spike in the 46-55 age group, while falls contributed to the spike in the oldest age group. Drugs and transportation deaths were approximately equal in the 56-65 year olds. In the year 2008, motor vehicle crashes reached a low in the 36-45 year category, but remained about constant for other groups over age 24. Accidental drug deaths did not occur in persons over the age of 65. No deaths resulted from accidental gunshot wounds in the year 2008.

As shown by our data in figure 7c, deaths due to accidents were much more common in men than women.

Figure 7a

2008 Accidental Deaths in Erie County

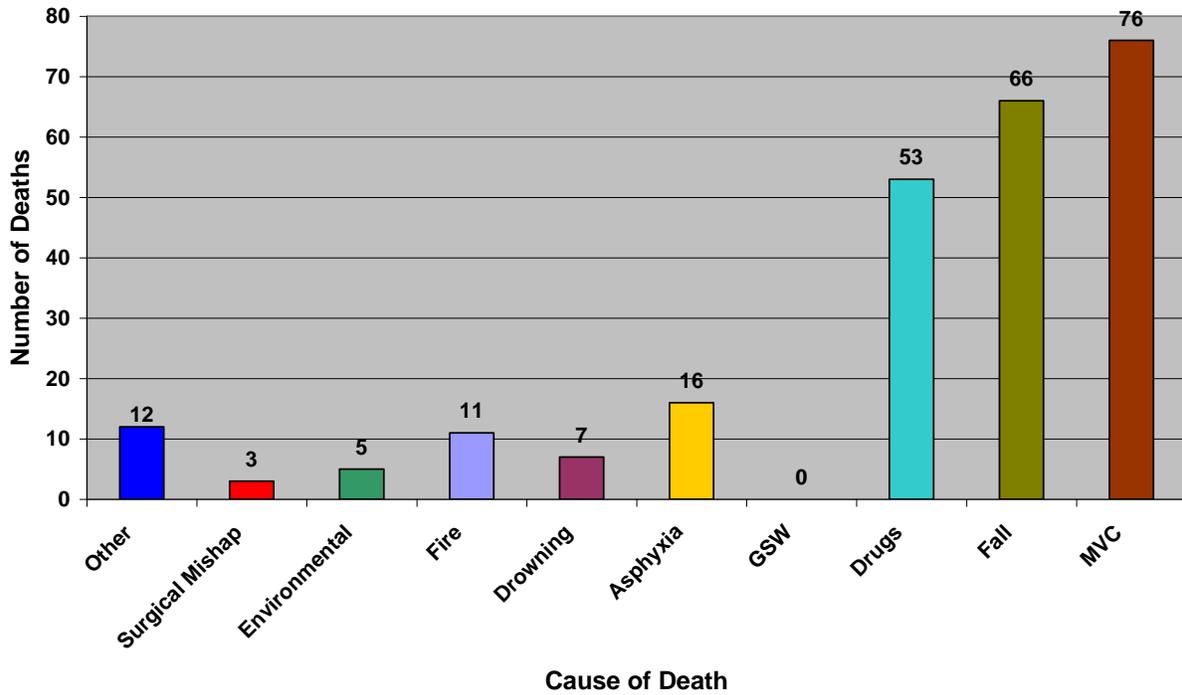


Figure 7b

2008 Accidental Deaths in Erie County by Age

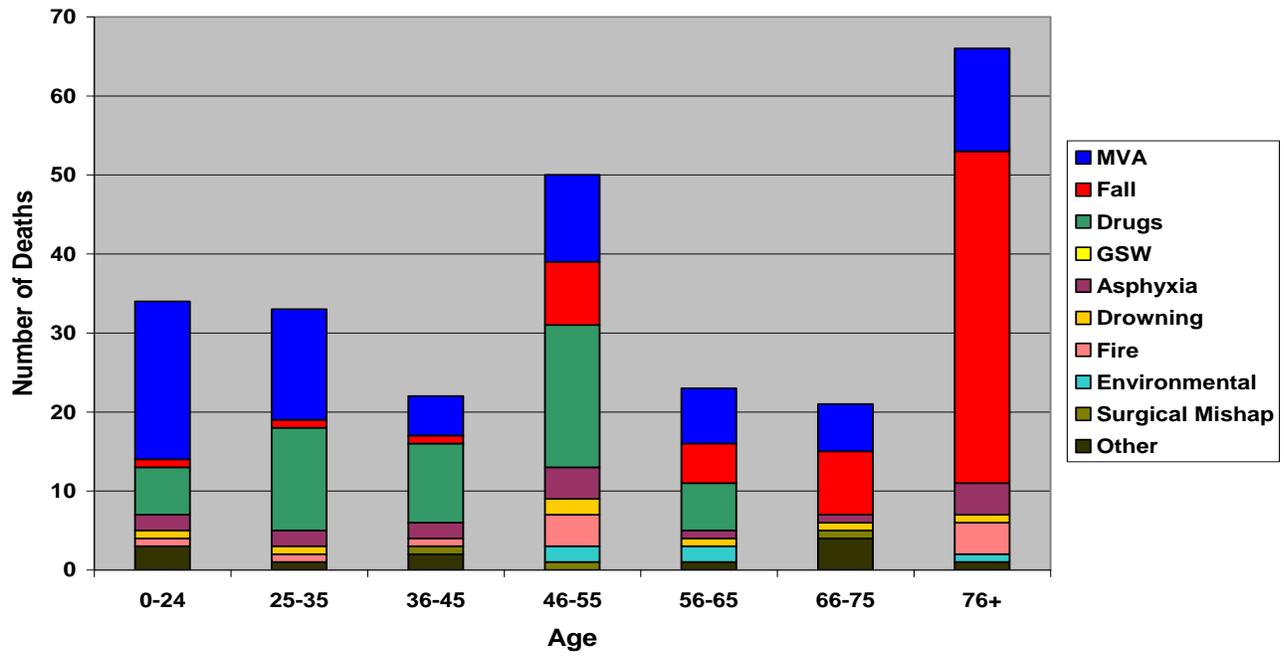
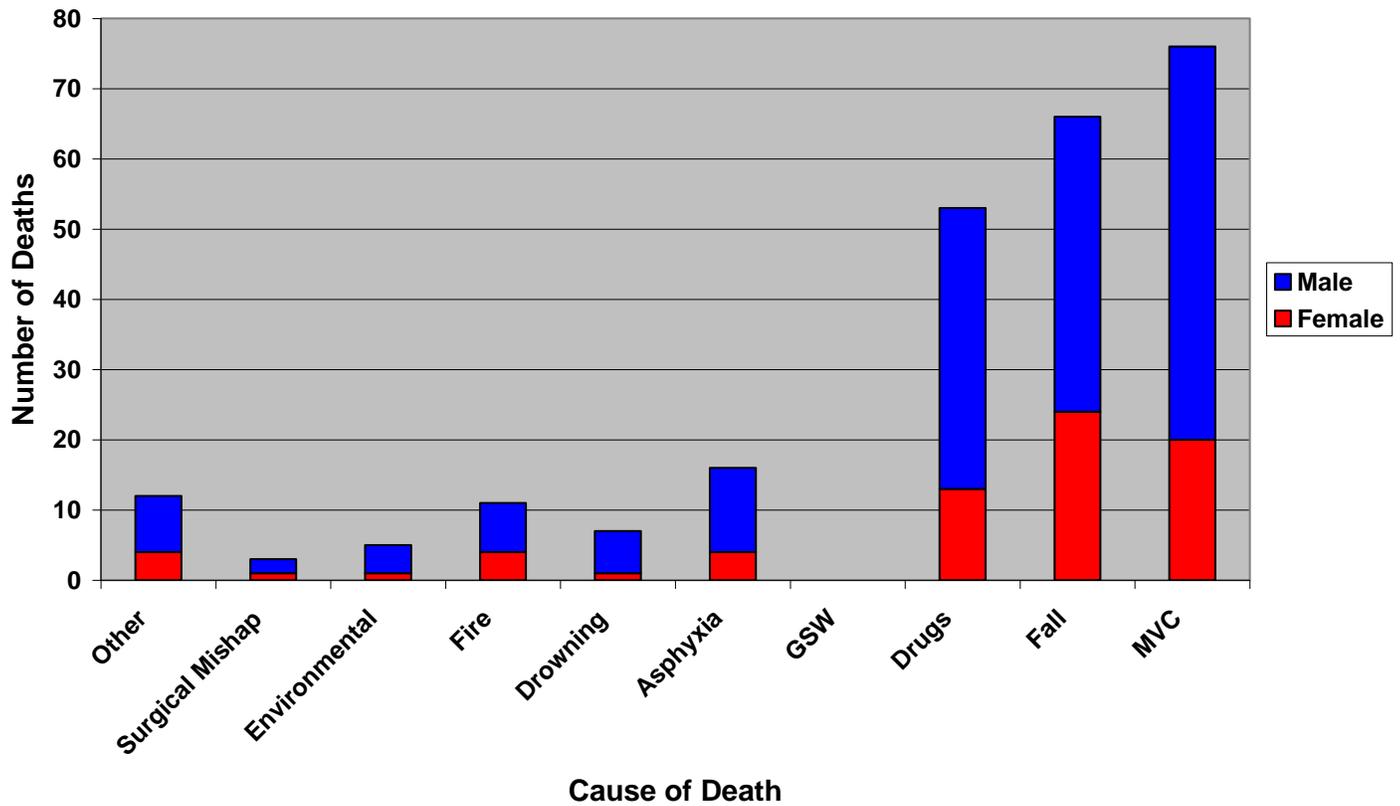


Figure 7c

2008 Accidental Death in Erie County by Gender



SUICIDAL DEATH OVERVIEW

The compilation of data in figures 8a-8c gives an overview of suicidal deaths categorized by type, age and gender. Figure 8a shows that there are three main ways that people took their own lives, namely, by self-inflicted gunshot wounds, hanging (asphyxia) and drug overdoses. Deaths by more active brutal means (gunshot wounds or hangings) were each at least three times more common than the more passive action of taking drugs. Gunshot wound and hanging deaths almost equaled each other.

As seen in figure 8b, the greatest number of suicides occurred in the 36-55 year age brackets (see also figure 4). Gunshot wounds or hanging were equally common means of suicide in those less than 25 years of age. Deaths due to drugs were not seen in those over 76 years. Gunshot wounds occurred across all age groups, peaking in the 36-45 year age brackets. Asphyxial deaths also occurred in all other age groups, peaking in ages 36-55 years.

In considering suicidal deaths by gender (figure 8c), men outnumbered women for all means of suicide, except for jumping from a high place. This holds particularly true for gunshot and asphyxial deaths.

Figure 8a

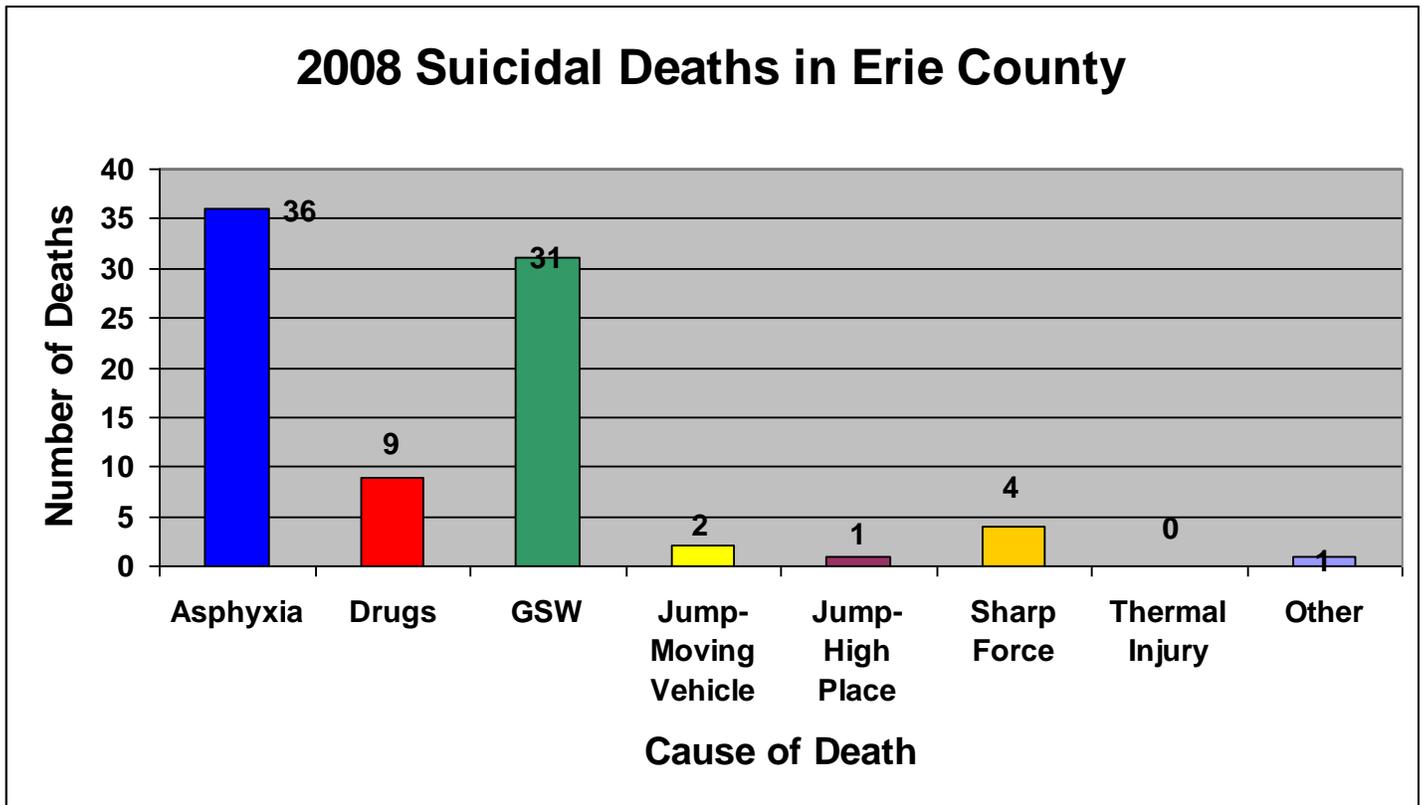


Figure 8b

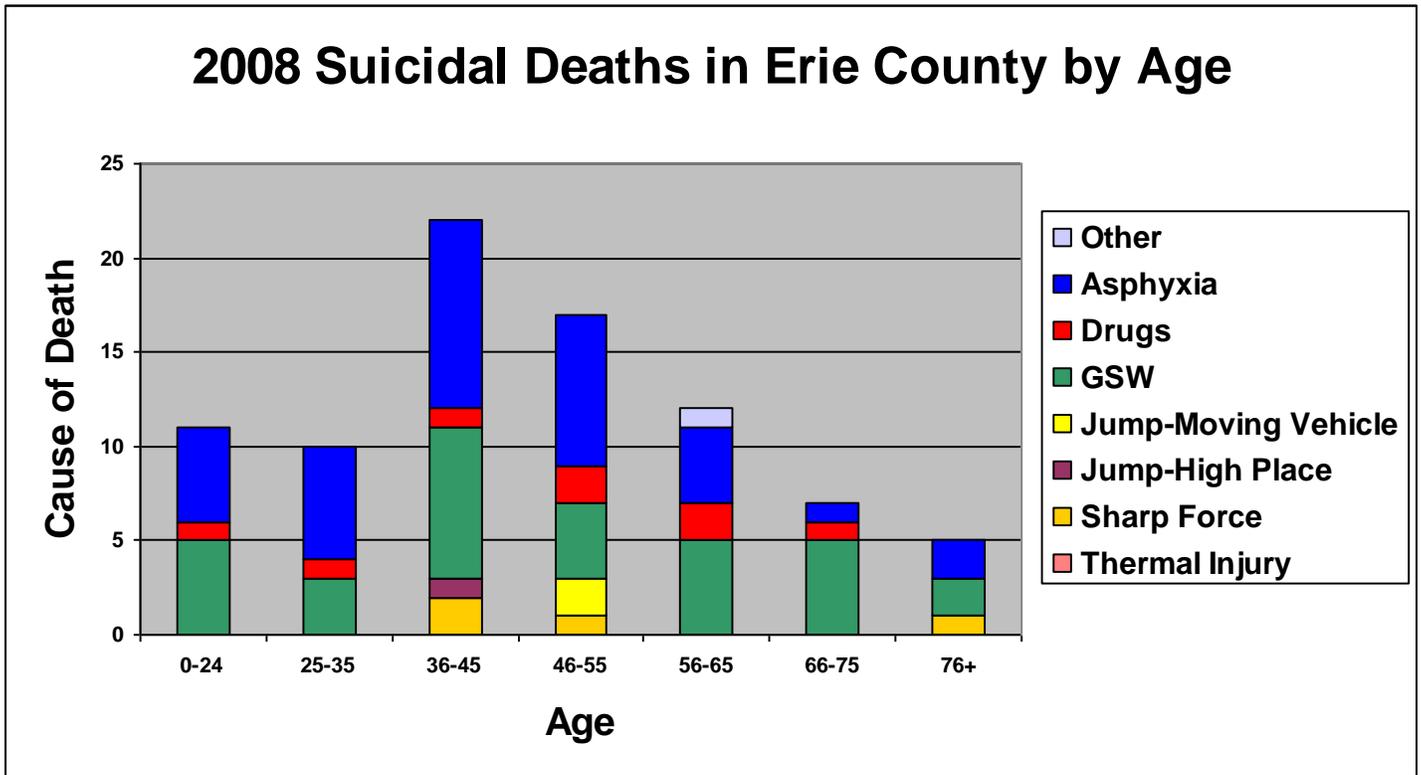
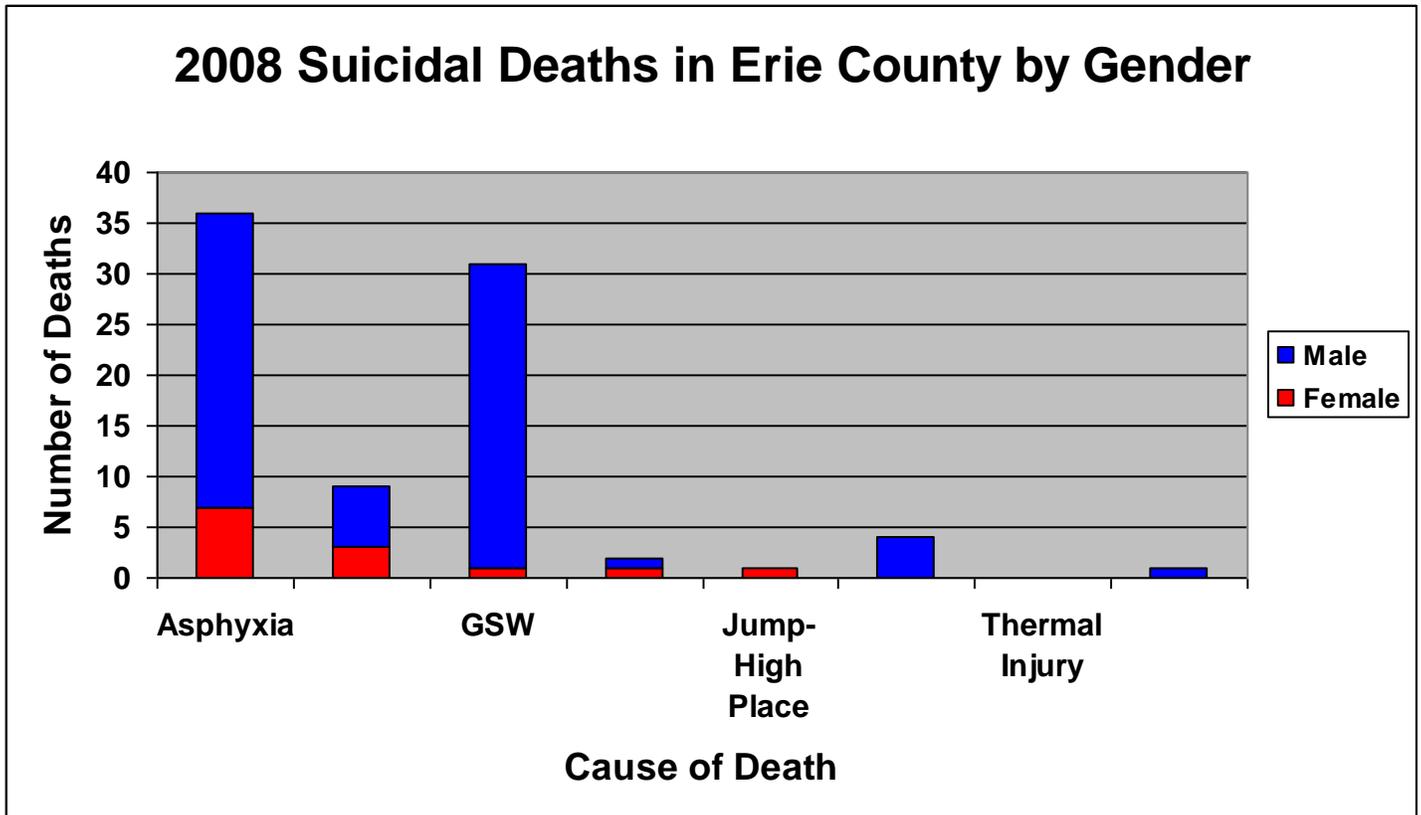


Figure 8c



HOMICIDAL DEATH OVERVIEW

The compilation of data in figures 9a-9c gives an overview of homicidal deaths categorized by type, age and gender. As shown in figure 9a, gunshot wounds were the most common homicidal cause of death, occurring about twelve times more often than any other means. Homicidal deaths due to blunt force injuries are even with that of sharp force injuries.

In those 45 years and younger, homicides were most commonly a result of gunshot wounds; for those 56-65 years, homicides were all due to gunshot wounds. Strangulation deaths only occurred in the ages ranging from 0-24 years and 36-45 years. In 2008 no homicides occurred in those aged 76+.

The data in figure 9c show overall that men were more likely than women to die at the hands of another. Many more men than women were shot to death.

Figure 9a

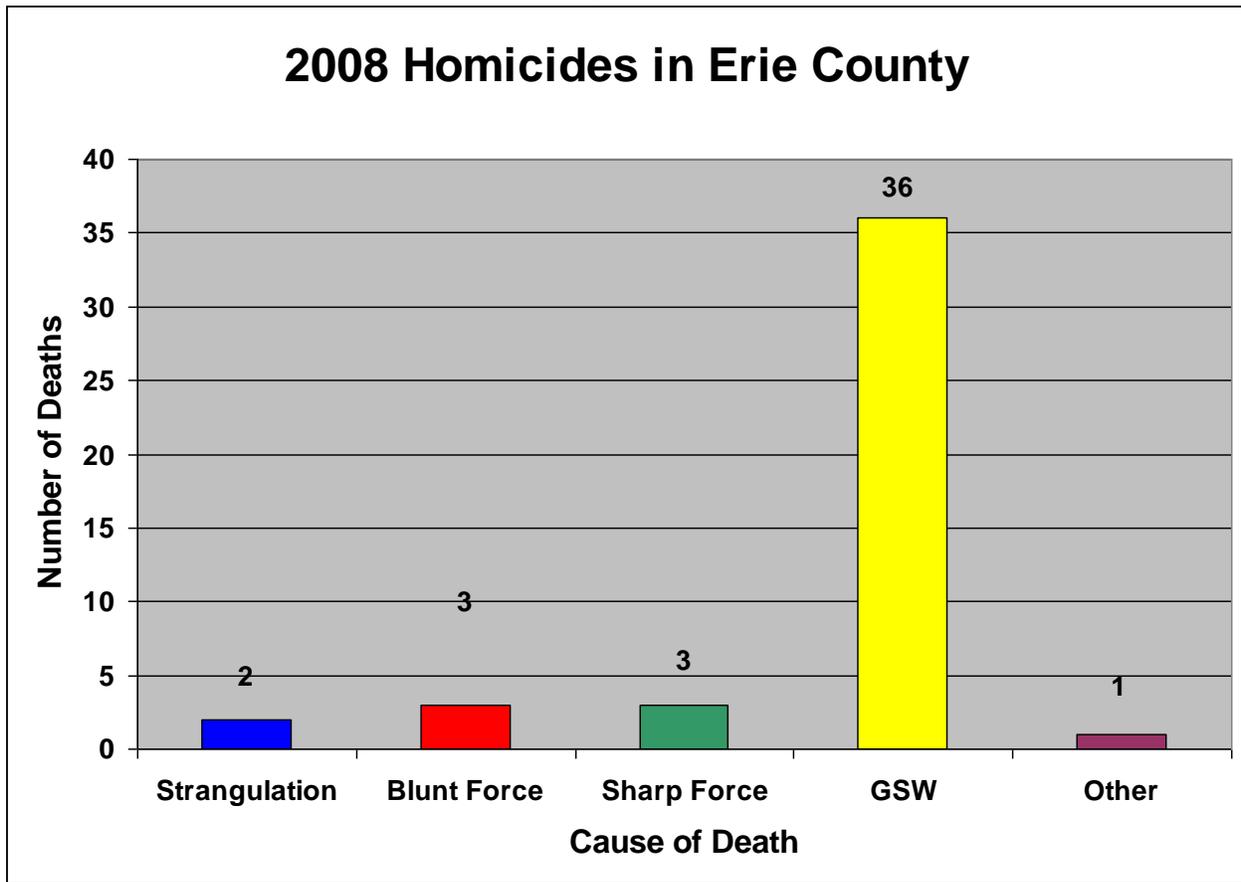


Figure 9b

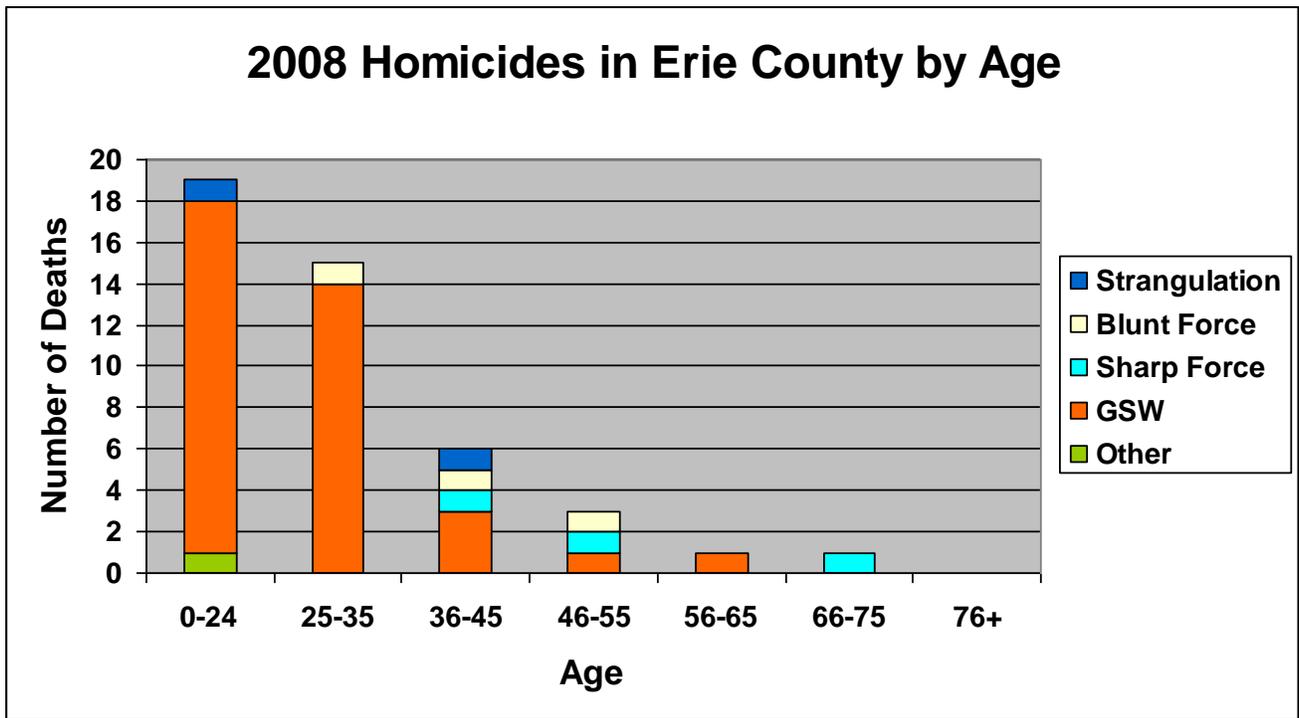
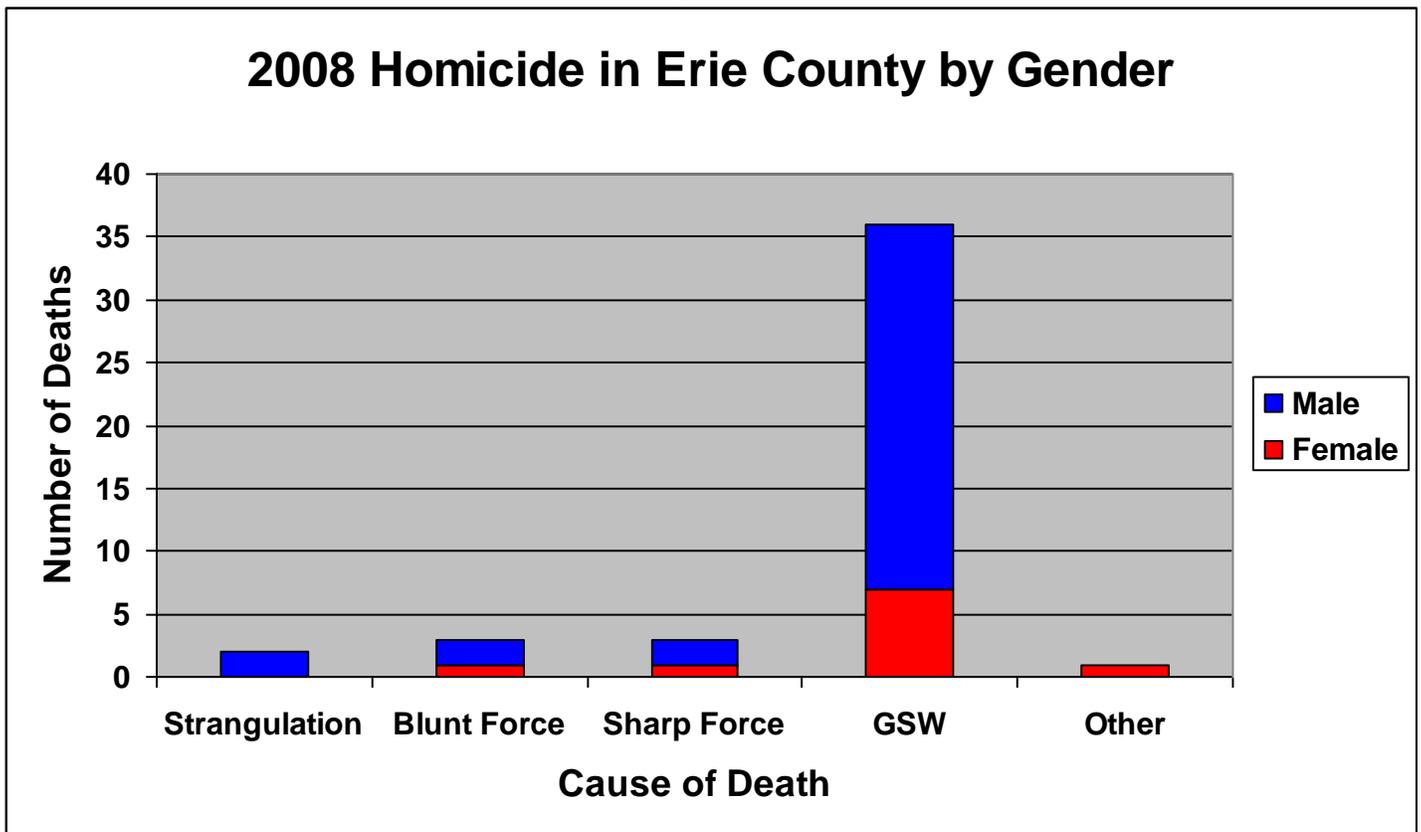


Figure 9c



UNDETERMINED DEATH OVERVIEW

The compilation of data in figures 10a-10c gives an overview of undetermined deaths categorized by type, age and gender. The far most common undetermined death as seen in figure 10a was due to drug overdose, where males barely outnumbered females (figure 10c). As stated elsewhere in this report, it is the policy of this office to classify deaths as undetermined when drugs are taken in excess - in that the intention of the decedent is not known. If the intent is known, it would be classified as accidental, suicidal or homicidal.

Figure 10b shows that the highest number of drug deaths occurred in the 46-55 age bracket, closely followed by the 36-45 age group. In 2008, no undetermined drug deaths occurred in those aged 76+. The data also show that advanced decomposition was only seen in those aged 36-55 years, possibly reflecting social distancing in the older compared to younger age groups.

Figure 10a

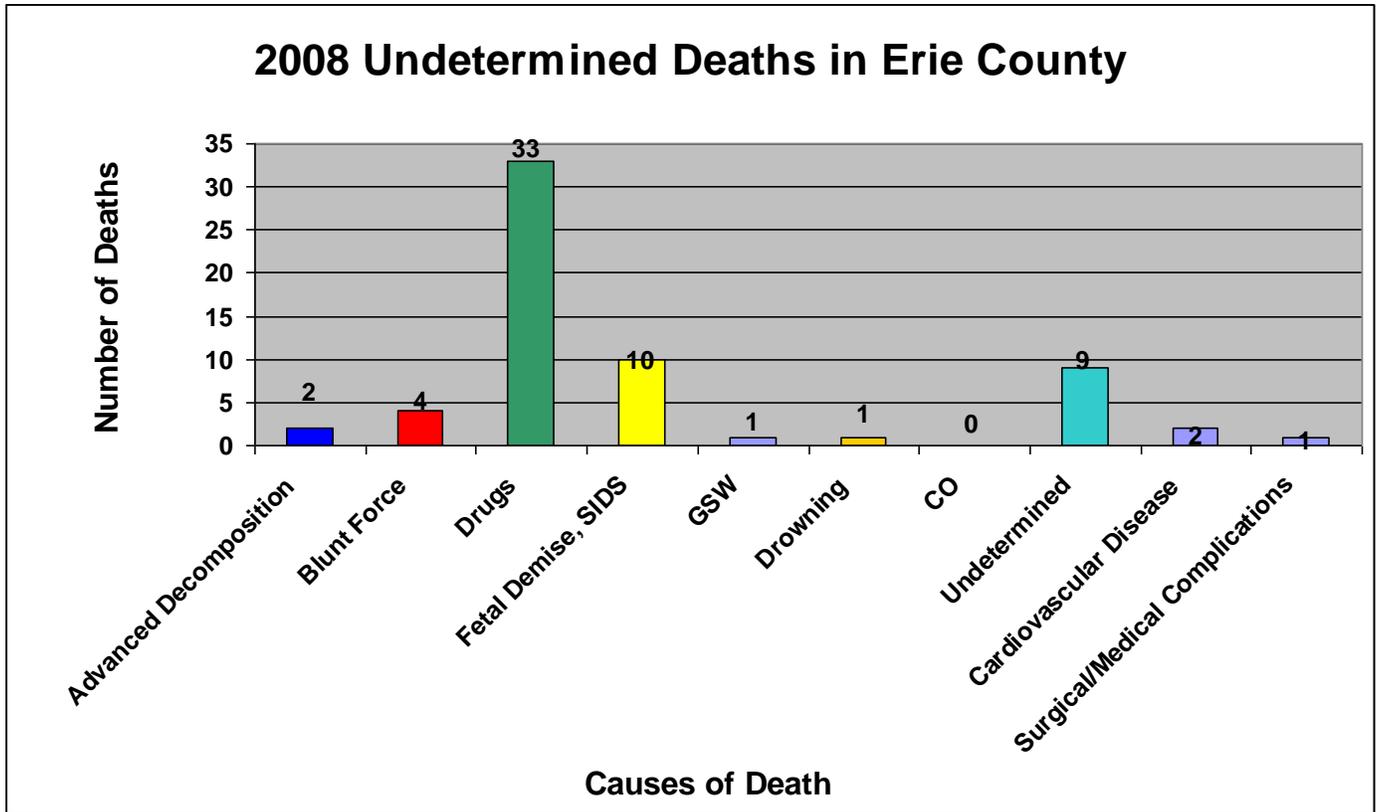


Figure 10b

2008 Undetermined Death in Erie County by Age

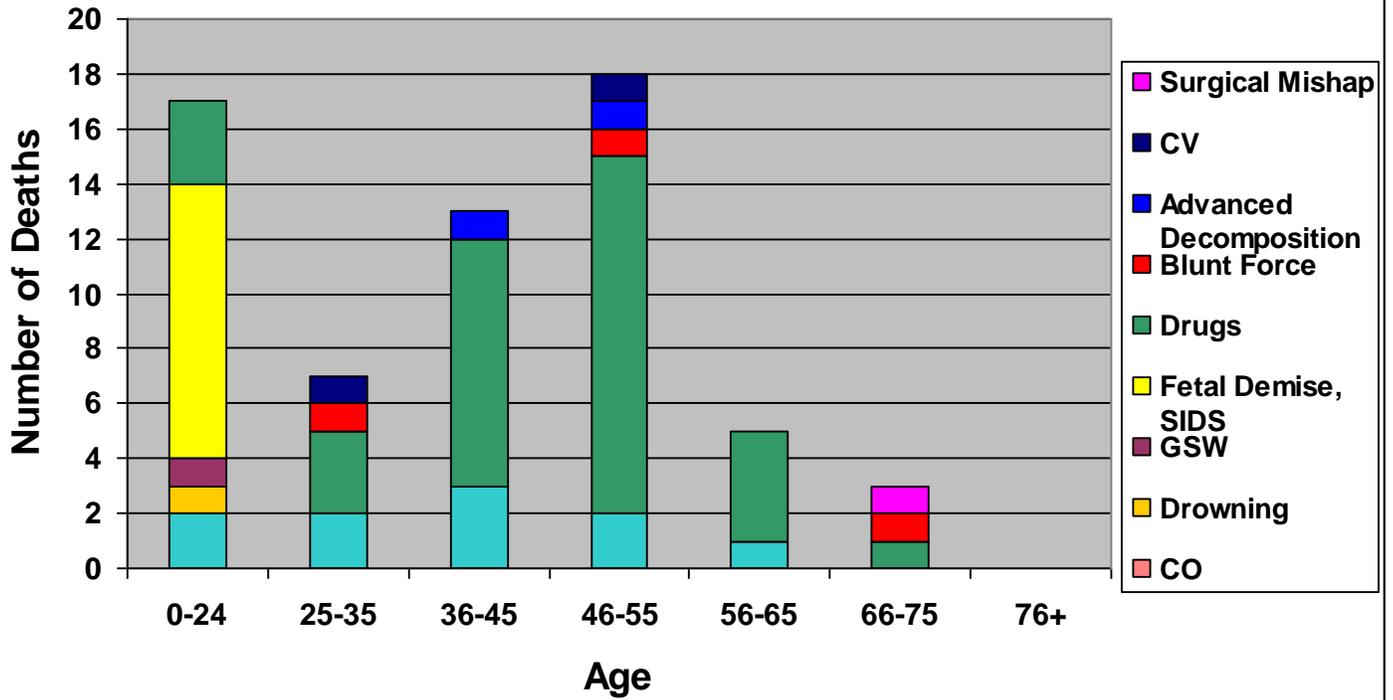
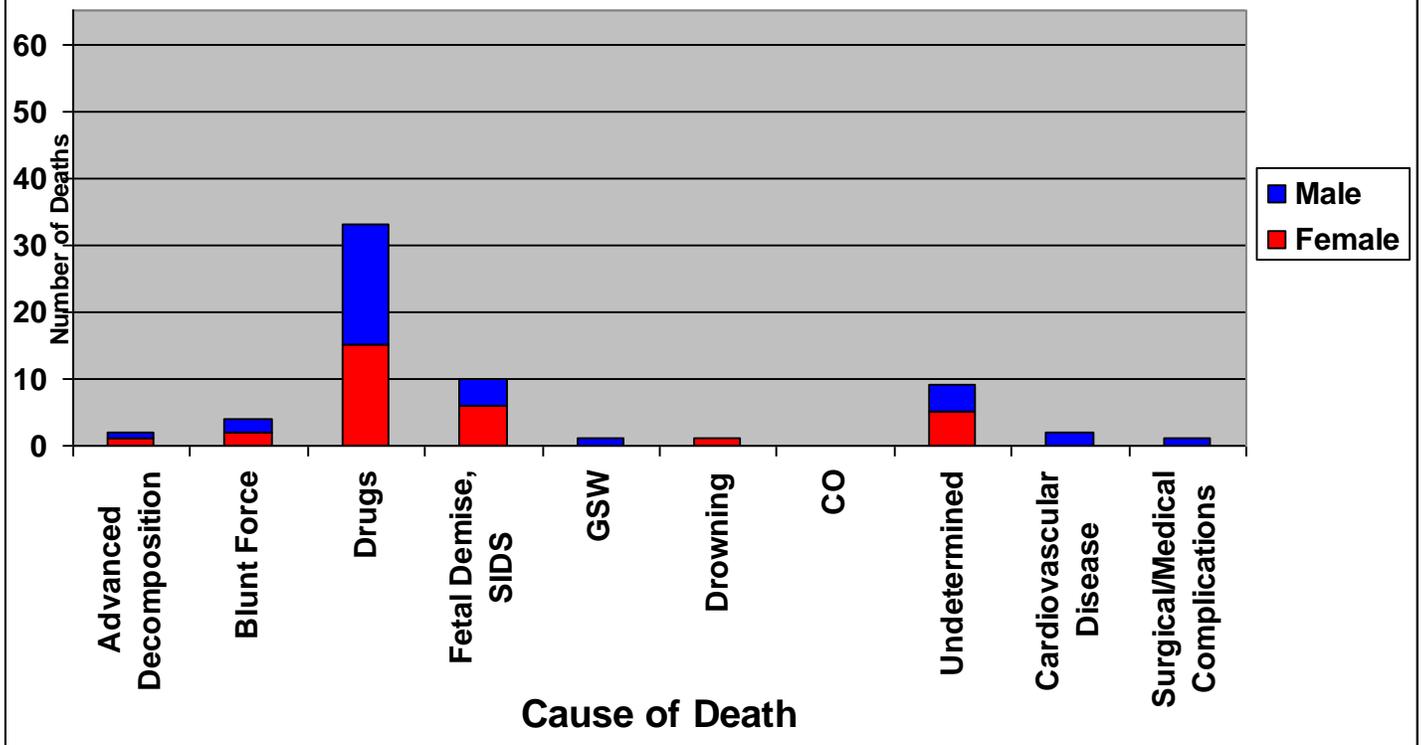


Figure 10c

2008 Undetermined Deaths in Erie County by Gender



ANNUAL TRENDS

According to Erie County statistics, there was a considerable drop in the death rate from the year 2005 to 2006, possibly reflecting the overall decrease in population of our Western New York community. Since 2006, however, the death rate has remained relatively constant. A slightly greater number of cases were reported to our office in 2008 than the previous year, but the overall autopsy rate fell. A greater number of external examinations and deaths more often certified by non-medical-examiner physicians both contributed to the decreased autopsy rate. Cases being referred from outside counties also increased from 2007 to 2008. Whereas in previous years (2005-2007), inspections accounted for fewer than 10% of cases, in 2008 this ratio increased to 15%. The cause(s) for this increase is(are) not entirely clear but may in part be due to better and more complete information guiding decisions regarding case disposition.

Approximately 40 fewer cases were found to meet ME jurisdiction criteria from 2007 to 2008. In our county, we continue to find that our caseload is composed largely of middle aged (36 – 65 years of age) white males dying of cardiovascular disease. The overall stratification of cases by manner was significantly different from one year to the next, with a decrease in natural, homicidal, suicidal and undetermined deaths from 2007 to 2008. Only accidental manners of deaths increased. This is explained not by increased carelessness of Erie county citizens, but rather by a mid-year change in office policy to classify drug deaths as *accidents* and not as *undetermined* as was previously done. In the year 2008, suicides again outnumbered homicides – in this year by a factor of 2. More persons hanged rather than shot themselves, regardless of gender. Homicides continued to result from gunshot wounds regardless of age, sex or race. In 2008, as in 2006 and 2007, more males than females died of drug overdoses.

