

Kent County Medical Examiner 1999 Annual Report

Office of the Medical Examiner
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Office of the Kent County Medical Examiner

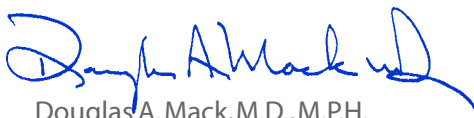
To the Kent County Board of Commissioners,
and to the Citizens of Kent County:

The responsibility of determining the cause and manner of unexpected deaths in Kent County is one that the Medical Examiner staff takes very seriously. The results of these investigations provide valuable information which is used by public health personnel, the criminal justice system, families of the deceased, and other concerned parties.

While many regard the Medical Examiner Program as being primarily concerned with the circumstances surrounding the end of life, Medical Examiners are equally concerned with the preservation of life. In 1999, Medical Examiner personnel continued to spend many hours with the Child Death Review Team to examine all types of data related to the deaths of children under 18 years of age in our community. In addition, Medical Examiner office staff began participating in the Michigan Medical Examiner Database, a statewide Internet-based system designed to collect enhanced medical examiner data. This annual report is the first to use data drawn from this database, and presents a greatly enhanced overview of Medical Examiner cases in Kent County.

In closing, I would like to thank the Kent County Board of Commissioners for their continued support of this program which enables the Medical Examiner staff to provide this valuable and necessary service for the citizens of Kent County. It is my pleasure to present the Kent County Medical Examiner's 1999 Annual Report.

Sincerely,



Douglas A. Mack, M.D., M.P.H.
Chief Medical Examiner

Medical Examiner Program Expenditures

1999 Expenditures

	Amount	Percentage
Medical Examiner (compensation)	\$118,036	15.3%
Autopsies	525,183	68.0%
Cadaver transportation	47,469	6.2%
Support services	45,511	5.9%
Administration	36,200	4.6%
Total	\$772,399	100.0%

Kent County Medical Examiner Program Personnel

Douglas A. Mack, M.D., M.P.H.
Chief Medical Examiner

John T. Connolly
Medical Examiner Investigator

Stephen D. Cohle, M.D.
Deputy Chief Medical Examiner

Paul R. Davison
Medical Examiner Investigator

Ramon B. Lang, M.D.
Deputy Medical Examiner

Martha J. Scholl
Medical Examiner Investigator

Bruce Murray, M.D.
Deputy Medical Examiner

Richard Washburn
Medical Examiner Scene Investigator

Larry J. Stalsonburg, D.O.
Deputy Medical Examiner

Camilla M. Fulvi
Administrative Assistant

David A. Start, M.D.
Deputy Medical Examiner

Carmen Perez
Medical Transcriptionist

1999 Medical Examiner Program Highlights

Medical Examiner office staff have continued to participate in the Michigan Medical Examiner Database, a statewide Internet-based system designed to collect enhanced medical examiner data, standardize the collection of data surrounding unexplained deaths, and improve the Medical Examiner's ability to report on program activity. As anticipated in last year's report, data from the Michigan Medical Examiner Database was used to create this Annual Report, a greatly enhanced examination of Medical Examiner cases in Kent County.

The American Board of Medicolegal Death investigators offered a registry examination in 1999 to death scene investigators, based on materials developed from 1994 to 1999 to standardize death investigation throughout the country. Medical Examiner Investigator Paul Davison passed the registry examination in 1999, and earned the title of Diplomat in the American Board of Medicolegal Death Investigators. The material used in the exam was from the U.S. Department of Justice book *Death Investigation: A Guide for the Scene Investigator*. Chief Kent County Medical Examiner Dr. Douglas Mack, and Medical Examiner Investigator Paul Davison were both members of expert panels that assisted the Department of Justice in developing the Guide.

Kent County Medical Examiners and Investigators continued to give many presentations and classes about the function of the Medical Examiner Program and death investigation, presenting lectures to local law enforcement agencies and schools throughout the year. Over 30 participants attended a death investigation course sponsored by Kent County, and the Kent County Medical Examiner's Office has become involved in training Coroners and Coroner Investigators for the State of Indiana.

Medical Examiner Reportable Deaths and Autopsy

The Michigan County Medical Examiners Law, P.A. 181 of 1953, as amended, and the Michigan Public Health Code, P.A. 368 of 1978, as amended, mandates that specific types of deaths (listed below, left) be referred to the Medical Examiner for investigation. Medical Examiner investigation of a death may also be ordered by the prosecuting attorney, the attorney general, or upon the filing of a petition signed by six (6) electors of a county. Not all deaths referred to the Medical Examiner for investigation necessarily result in autopsy, however, autopsy is generally ordered in certain types of cases (listed below, right).

Types of Deaths Reportable to the Medical Examiner, P.A. 368 of 1978

1. Sudden deaths and unexpected deaths (all deaths occurring in operating room, in recovery room, anesthesia-related, natural death but not expected, occupational related death, etc.)*
2. Accidental deaths (motor vehicle, burns, drowning, drug overdose, drug toxicity, etc.)*
3. Violent deaths (i.e. homicide, gunshot, stabbing)*
4. Suspicious circumstances surrounding a death.*
5. Death of a mother due to an abortion.
6. Death of a prisoner in any county or city jail who dies while so imprisoned.
7. Fetal death occurring without medical attendance at or after the delivery.

In terms of physician attendance in these matters for the purpose of the Medical Examiner program, we consider that an investigation is required when:

- A. The deceased was last seen by a physician more than ten (10)** days before his or her death, if the cause of death appears to be other than the illness or condition for which the deceased was being treated.
- B. The attending physician cannot accurately determine the cause of death.
- C. When the deceased has not received any medical attendance during the 48 hours*** prior to the hour of death and the attending physician is unable to accurately determine the cause of death.

* All trauma-related deaths regardless of when trauma occurred.

** The ten (10) day requirement relates solely to physician attendance.

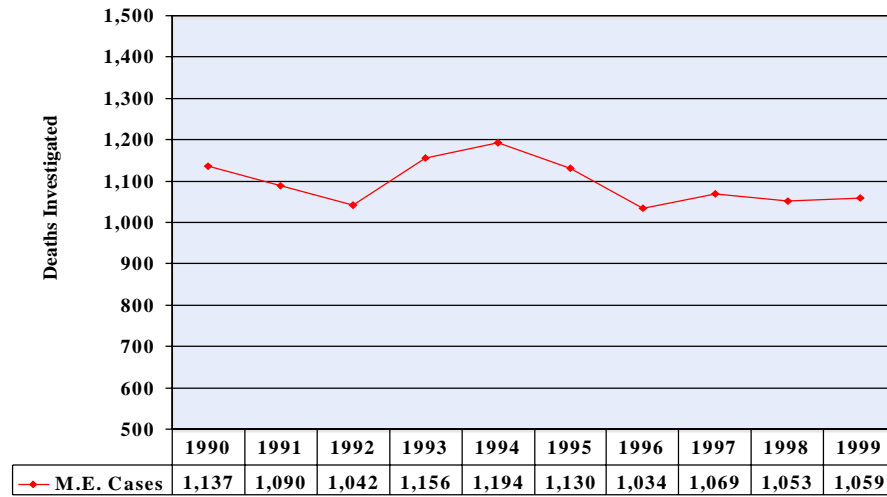
*** The 48 hour requirement triggers an investigation when there has been no medical attendance of any kind.

Types of Medical Examiner Cases for which Autopsy is Generally Ordered

1. Sudden deaths and unexpected deaths only when, in the Medical Examiner's judgement, sufficient medical history is not available to determine cause of death.
2. Accidental deaths (motor vehicle, burns, drowning, drug overdose, drug toxicity, etc.) If an individual has been hospitalized for a prolonged time, it is the Medical Examiner's decision to order an autopsy.
3. Violent deaths (homicide, suicide, gunshot, etc.)
4. Suspicious circumstances surrounding death, including unidentified bodies.
5. Death of a mother due to an abortion.
6. All sudden infant deaths (SIDS).
7. Death of a prisoner in any county or city jail who dies while so imprisoned.
8. In a fetal death occurring without medical attendance at or after delivery.
9. An autopsy may be ordered at the discretion of the Medical Examiner when death occurs more than ten days after the deceased was last seen by a physician, if the cause of death appears to be other than the illness or condition for which the deceased was being treated.
10. Death for which the attending physician cannot accurately determine the cause.
11. Anesthesia-related and unexpected deaths of patients in health care institutions.
12. Work-related deaths or deaths which occur in the workplace.

Demographics of Medical Examiner Cases

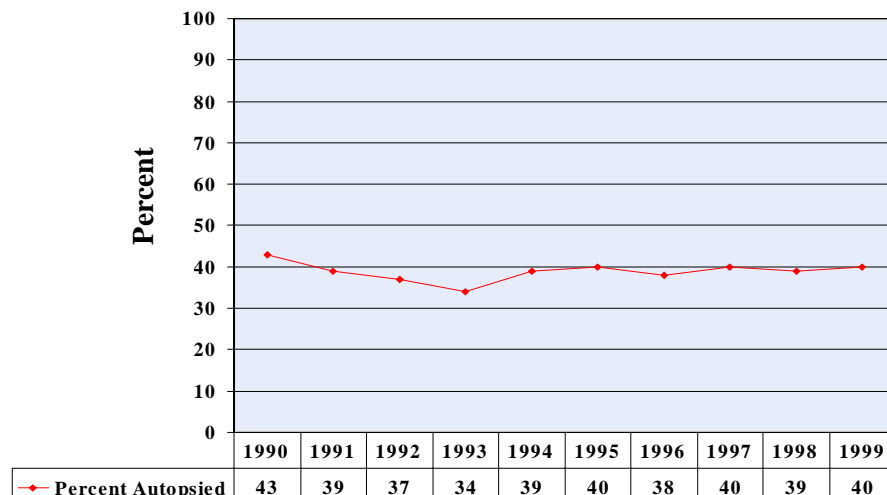
(Graph 1) **Kent County Medical Examiner Cases, 1990-1999**



Caseload

The Medical Examiner Program investigates approximately 25% of all deaths in Kent County, averaging 1096 cases annually over the past decade. Kent County Medical Examiners investigated an average of 88 deaths per month in 1999. The majority of scene investigations (68%) are prompted by police agencies, most likely as the result of a 911 call. In 1999, Kent County Medical Examiner assistance and/or investigation was requested by 43 different police agencies in west central Michigan.

(Graph 2) **Percentage of Medical Examiner Cases Autopsied, 1990-1999**

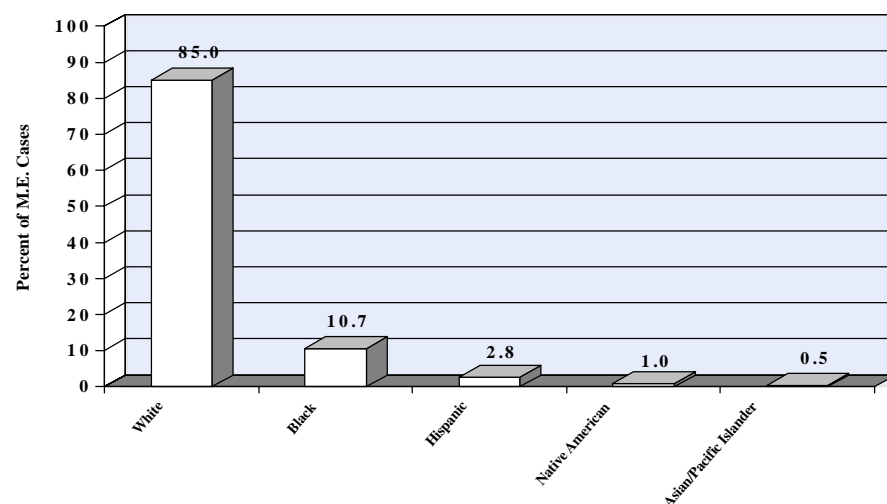


Autopsies were performed on 40% of the Medical Examiner cases in 1999 (consistent with a 39% average for the 1990's). Autopsies are ordered by a Medical Examiner to obtain tissue and body fluid samples for microscopic and laboratory examination, and to visualize the internal organs for gross or pathologic changes in order to more definitively determine the cause of death.

Race, Sex, and Marital Status

Kent County residents comprise the largest percentage of Medical Examiner cases (87%), but residents of 31 Michigan counties and eight other states died unexpectedly while in Kent County in 1999. Because Grand Rapids is a regional health care center, some of the non-resident deaths occurred in individuals sent to a Kent County hospital for care. Other non-resident cases result from fatalities on Kent County roads and highways.

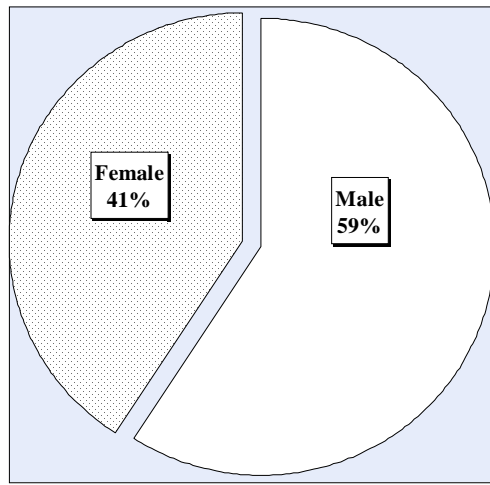
(Graph 3) **Medical Examiner Cases by Race/Ethnicity, 1999**



The distribution of cases by race or ethnicity is similar to overall county

Demographics of Medical Examiner Cases

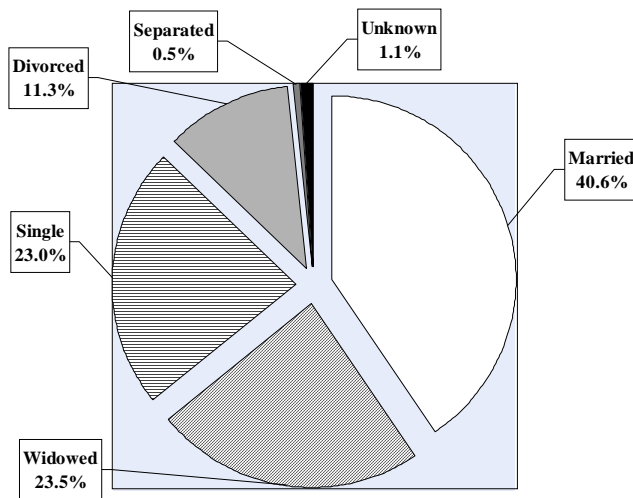
(Graph 4) **Medical Examiner Cases by Sex of Deceased, 1999**



estimates, though African Americans and Native Americans are over-represented slightly. The greatest percentage of Medical Examiner cases lived in the city of Grand Rapids (47%), and 50% of all cases were from 7 zip codes (49503 - 49509).

When comparing other key demographic characteristics of Medical Examiner cases to Kent County and City of Grand Rapids distributions, some interesting patterns emerge. Males are more likely to die unexpectedly in Kent County. While males make up 49% of the Kent County population, they account for 59% of Medical Examiner cases. Males, generally, tend to have a greater predisposition to both natural and violent causes of death.

(Graph 5) **Medical Examiner Cases by Marital Status of Deceased, 1999**

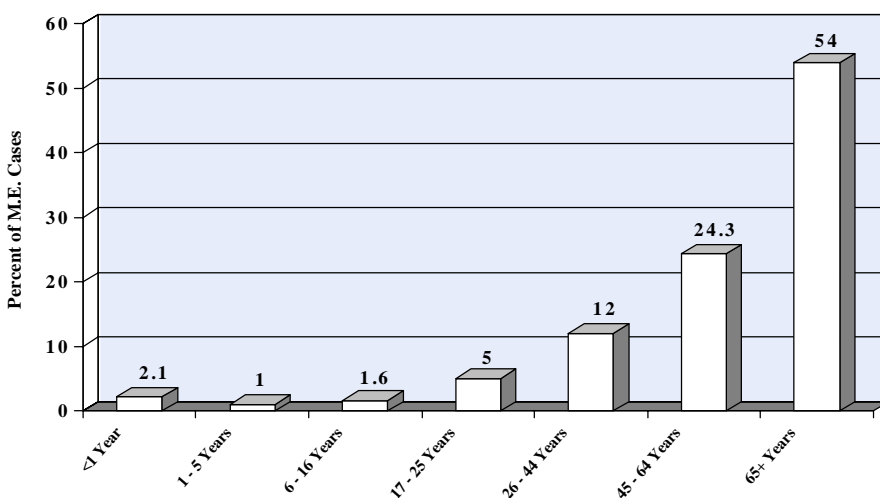


Similarly, the distribution of marital status among Medical Examiner cases suggests that married persons are less likely to die unexpectedly than single individuals (widowed, single, divorced or separated categories).

Age of Deceased

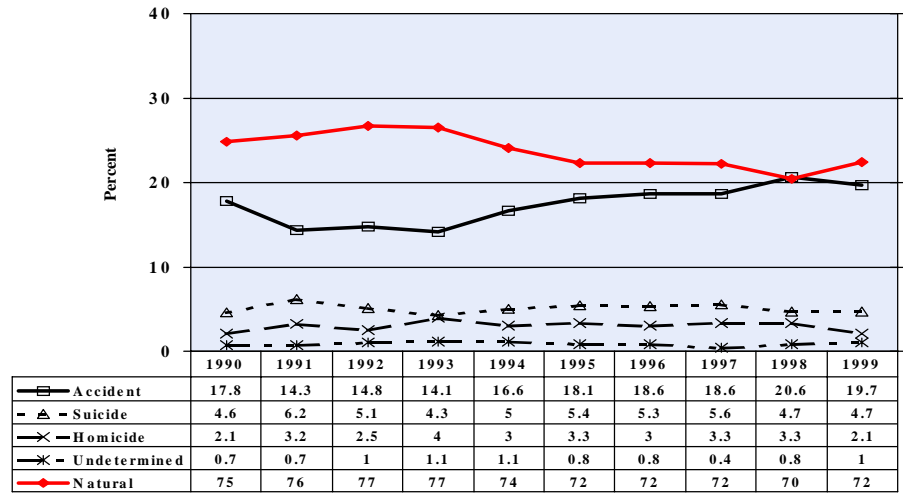
The age distribution of Medical Examiner cases is skewed to age categories (45-64) where death, if it occurs, is more likely to be sudden and considered "unexpected." The majority of cases in this age category represent deaths due to chronic disease, and especially heart disease. Although persons aged 45 to 64 account for approximately 15% of all Kent County deaths, they account for over 24% of Medical Examiner cases.

(Graph 6) **Age at Death, Kent County Medical Examiner, 1999**



Manner of Death, Suicide, and Homicide

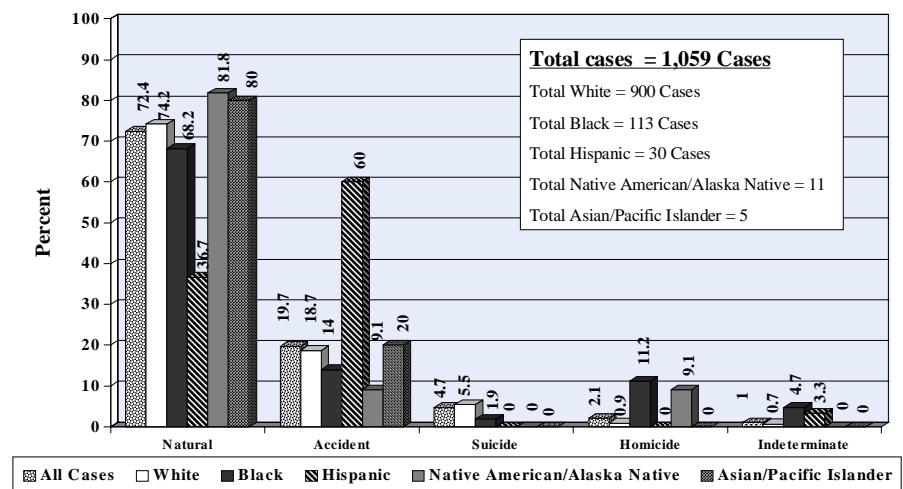
(Graph 7) **Manner of Death, Medical Examiner Cases, 1990-1999**



Manner of Death

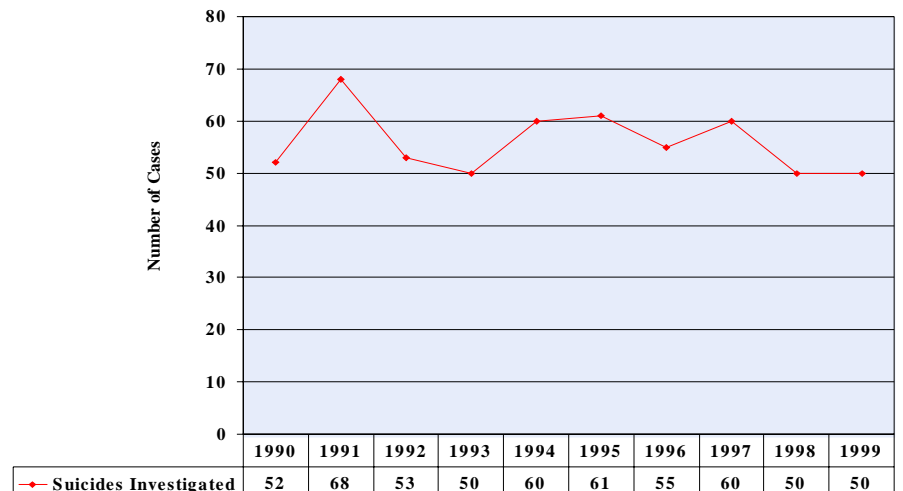
In addition to establishing a cause of death, the Medical Examiner is responsible for determining the manner of death — natural (e.g., cardiovascular disease), accidental (e.g., motor vehicle fatality), suicide, homicide, or indeterminate (not enough evidence to determine a manner of death). There has been little change in manner of death trends in the Kent County Medical Examiner Program during the 1990's.

(Graph 8) **Manner of Death, Percentage by Race/Ethnicity, 1999**



However, when comparing manner of death across different racial and ethnic groups, several disparities become apparent. While the greatest proportion of deaths investigated are still natural, African Americans are over-represented in homicide and when the manner of death is indeterminate. Other data corroborates these results: overall death rates due to homicide for African American male residents of Kent County are approximately 20 times higher than for white males (Kent County Health Department, *The Health of Kent County 1999*). With respect to Hispanic cases, the greatest proportion of deaths investigated were categorized accidental.

(Graph 9) **Suicide Cases, Kent County Medical Examiner, 1990-1999**

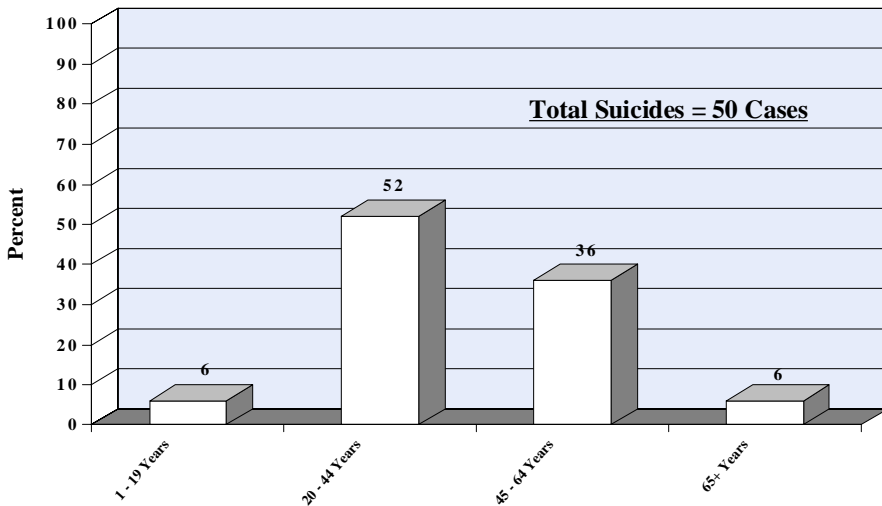


Suicide

The Medical Examiner program investigated an average of 56 suicides a year during the 1990's. Most suicides (88%) occur either in the 20-44 year old age group or the 45 to 64 year old age group, with relatively few on either end of the age spectrum. Males account for 70% of Kent County suicides.

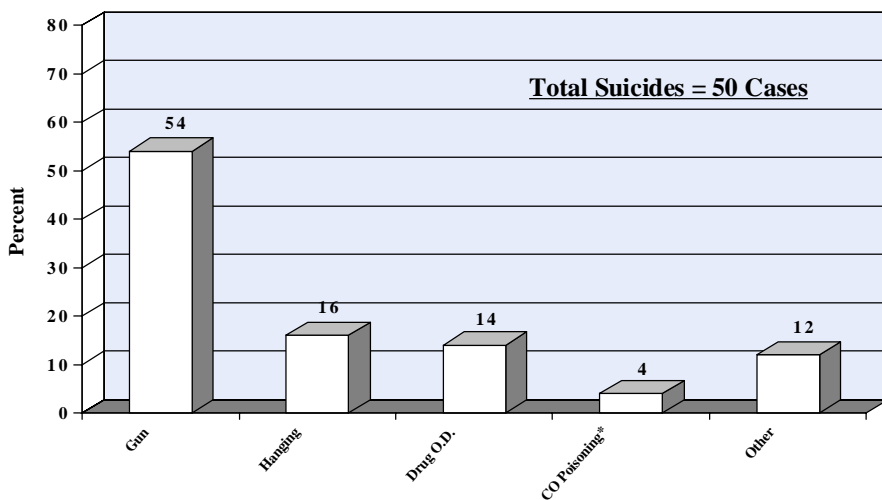
Manner of Death, Suicide, and Homicide

(Graph 10) Medical Examiner Suicide Cases by Age of Deceased, 1999



Use of a firearm was the most common (54%) method of suicide in Kent County in 1999, and 81.5% of gun-related suicides were male. Suicide by hanging or drug overdose (legal or illegal) accounted for 30% of Kent County suicides in 1999. Drug overdose and "other" (jumps, automobile, self-inflicted knife wounds, etc.) are the only categories where females represented the larger portion of deaths (71% and 67% respectively).

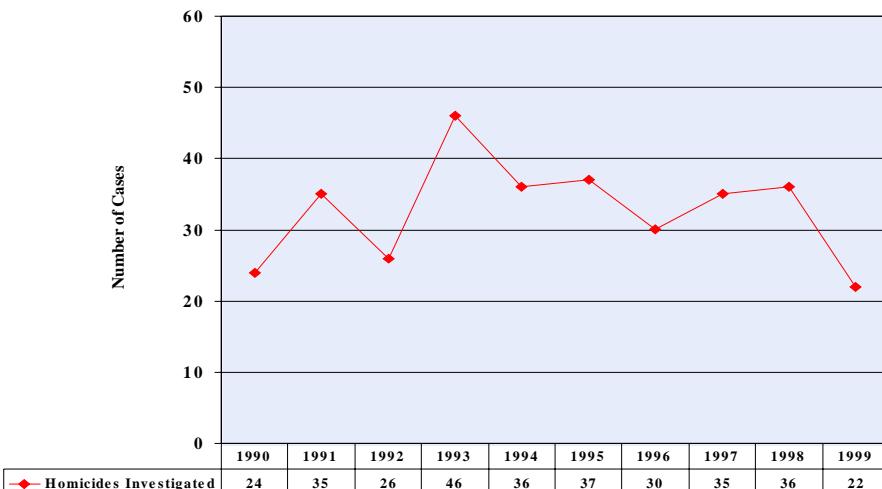
(Graph 11) Medical Examiner Suicide Cases by Method Used, 1999



Homicide

On an annual basis, the Medical Examiner program averaged 35 homicide investigations during the 1990's. There were 14 fewer homicides cases in 1999 than in the previous year, and it was the first year since 1992 when fewer than 30 cases were investigated. African Americans account for the majority of homicides in Kent County (55% of homicide investigations in 1999 were African American), although there was an overall 33% decrease in African American homicides from preceding years.

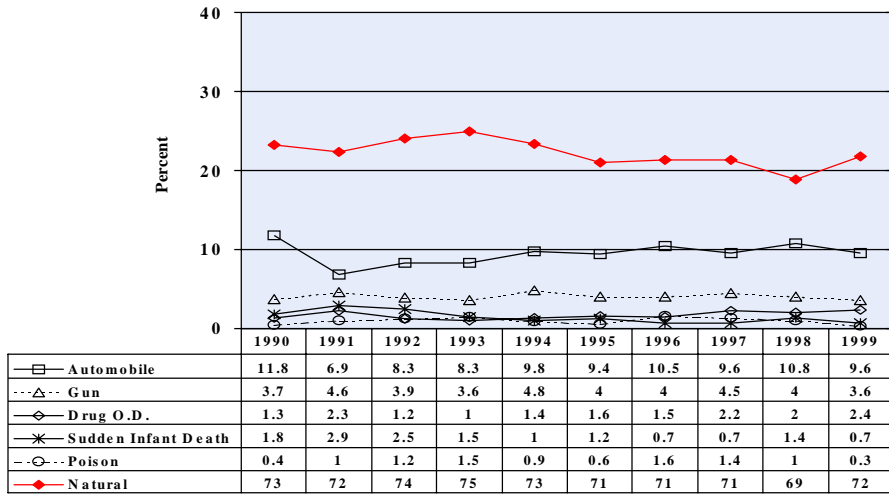
(Graph 12) Kent County Medical Examiner Homicide Cases, 1990-1999



Medical Examiners determine both the cause and manner of death, but what is the difference? Generally, **cause of death** refers to the specific circumstances that resulted in an individual's death. Heart attack, head injury, gunshot wound, are all examples of causes of death. The **manner of death** refers to how the cause of death occurred, and is very important to the investigation of a death. If a gunshot wound, for example, is found to be the cause of death, the manner of death could be homicide, suicide, or even accidental -- a critical determination, and one that the Medical Examiner takes very seriously. The manner of death for conditions such as heart disease, diabetes, or cancer, is generally described as 'natural' and the majority of Medical Examiner cases fall into this category.

Cause of Death, Deaths Due to Drugs and Guns

(Graph 13) Medical Examiner Cases by Cause of Death, 1990-1999

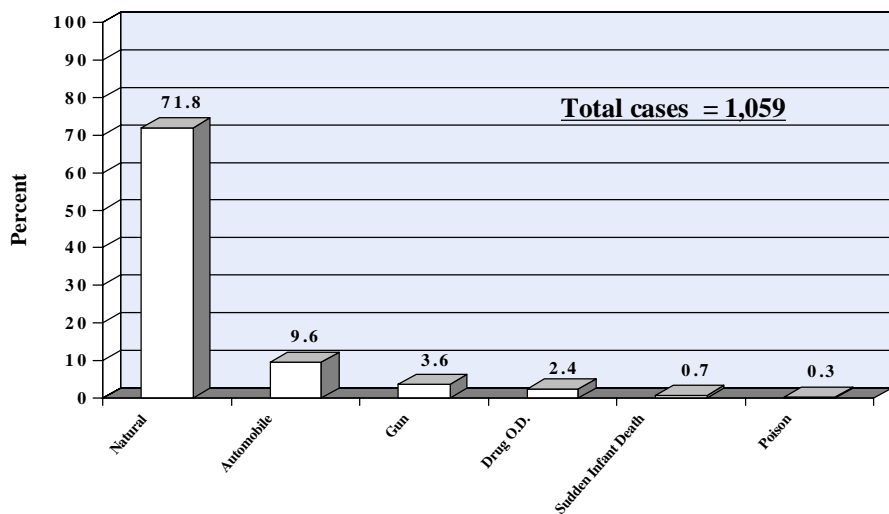


Cause of Death

The Medical Examiner records cause of death on the death certificate of the deceased. Most cause of death determinations without autopsy (60%) are based upon the medical history of the deceased and the events surrounding the death. Natural causes (heart disease, stroke, lung disease, etc.) have typically accounted for over 70% of Medical Examiner cases for the past decade.

Because more detailed reporting on every cause of death is not feasible for a yearly report, each annual report will highlight selected causes. In this report, we examine deaths caused by drugs and guns (Medical Examiner cases in which the death certificate listed a specific drug or gun shot wound as the primary cause of death).

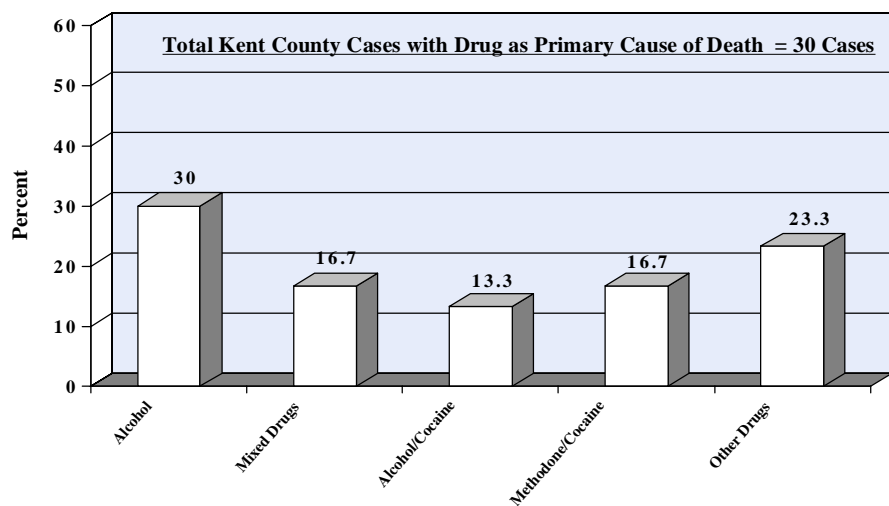
(Graph 14) Medical Examiner Cases by Cause of Death, 1999



Drug-Related Cases

In 1999, there were 30 cases where drugs (including alcohol) were identified as the primary cause of death. Approximately 4.5% of all Medical Examiner cases had a reported history of alcohol abuse, and 1.7% had a reported history of drug abuse. Alcohol toxicity accounted for 30% of drug deaths, and "other drugs" (primarily narcotic analgesics, e.g. morphine, meperidine) were responsible for 23% of deaths in this category. Twenty of the drug deaths were the result of various combinations of drugs and alcohol.

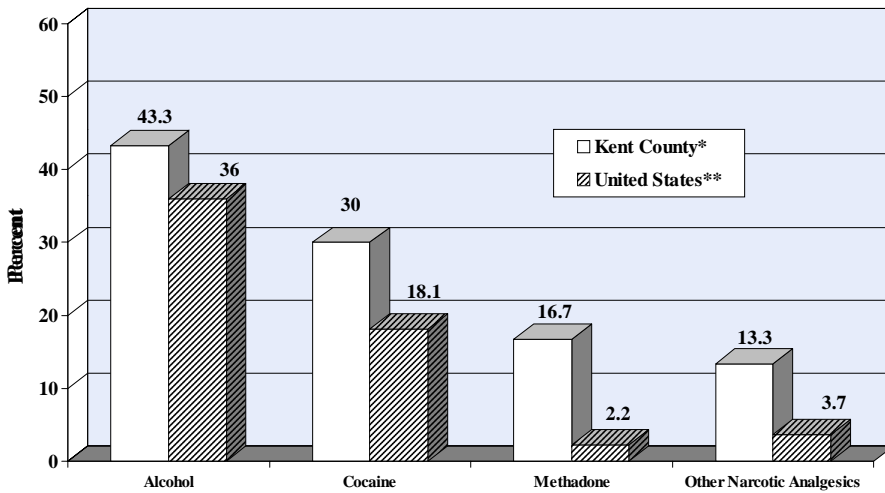
(Graph 15) Medical Examiner Drug Deaths by Type of Drug, 1999



As mentioned earlier in this report, these data represent relatively few occurrences, which inflates the

Cause of Death, Deaths Due to Drugs and Guns

(Graph 16) **Drug Deaths by Type of Drug, Kent County and United States, 1999**

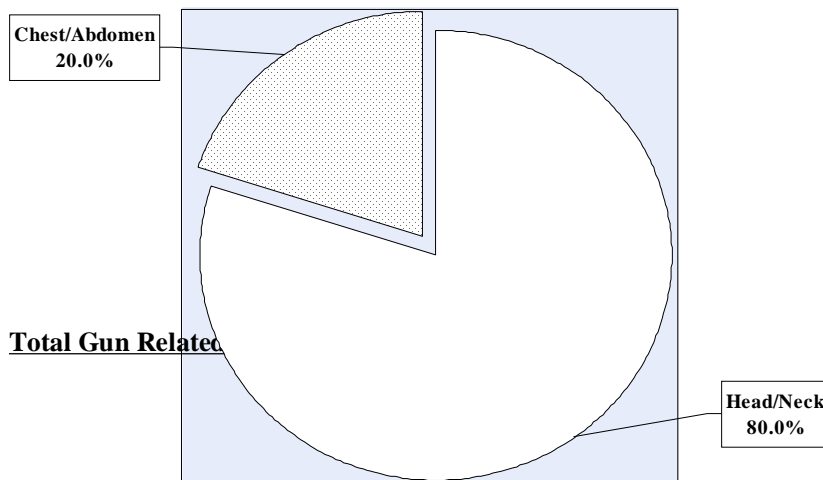


magnitude of individual drug breakouts (e.g., there were four (4) deaths due to methadone toxicity in 1999). Hopefully, long term trends may improve the usefulness of these data for substance abuse prevention planning.

Gun Related Deaths

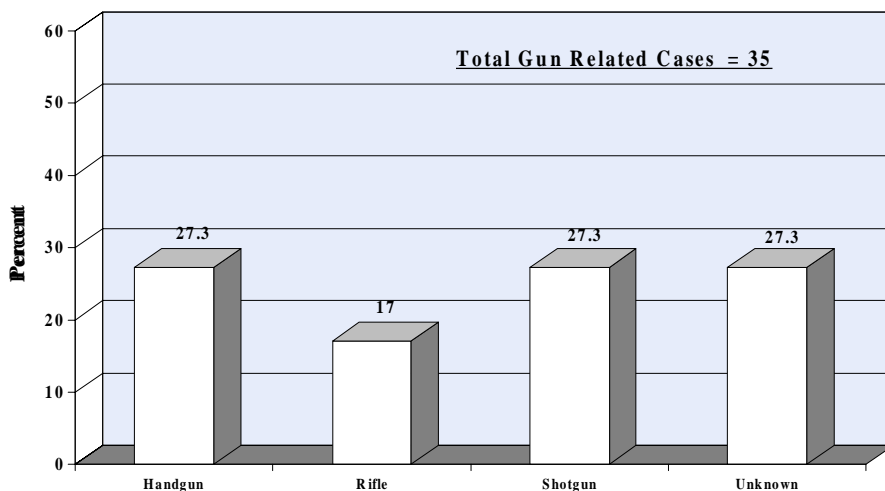
There were 35 gun-related Medical Examiner cases in 1999; 66% were self-inflicted wounds (suicide was the manner of death) and 23% were the result of criminal use of the firearm (homicide). The age range of the person handling the firearm was from 16 to 76 years old, and the average was 42.

(Graph 17) **Medical Examiner Gun-Related Deaths by Site of Wound, 1999**



The site of the wound is indicative of the manner of death for most of the gun related deaths (suicide). The head and/or neck is the primary site for gun-related deaths, which is consistent with suicide as the manner of death. Wounds to chest, abdomen, and back account for 20% of all gun-related deaths and, for the most part, are related to homicide as the likely manner of death. The type and caliber of firearm used is also collected (when known), and in 1999 there was an equal distribution of handguns and shotguns used in these fatalities.

(Graph 18) **Medical Examiner Gun Deaths by Type of Firearm Used, 1999**



Medical Examiner Program

The Medical Examiner Program is charged with determining the cause and manner of death in sudden, unexplained, or medically unattended deaths. Although Medical Examiners are trained to collect information about death, data from the Medical Examiner Program provides an equally intriguing overview of life and health in Kent County.



Kent County Medical Examiner

1999 ANNUAL REPORT

OFFICE OF THE MEDICAL EXAMINER
700 FULLER N.E. GRAND RAPIDS, MICHIGAN 49503

Kent County Medical Examiner, 1999 Annual Report

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Grand Rapids, Michigan

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