

# Kent County Medical Examiner



## 2001 Annual Report

**Office of the Medical Examiner**  
700 Fuller N.E.  
Grand Rapids, Michigan 49503

# 2001 Annual Report

---

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

Inasmuch as circumstances may sometimes seem to conspire against those who in death become part of the Medical Examiner system, circumstance may likewise result in the continuation of certain situations among the living. Although at this time last year I had not anticipated continuing as Chief Medical Examiner throughout 2001, the search for a new Chief Medical Examiner was not completed until the spring of 2002 -- circumstance that compelled my continued service. In any case, as of this writing, Dr. David Persaud is my appointed successor, and scheduled to assume the duties of Chief Medical Examiner July 1, 2002.

The responsibility of determining the cause and manner of unexpected deaths in Kent County is one that the Medical Examiner staff have always taken very seriously. Through rigorous investigation of the scene of death, the medical and personal history of the deceased, as well as the physical pathology revealed through autopsy, Medical Examiners and Medical Examiner Investigators are able to find answers where before there were only questions. Our investigations yield valuable information -- data that can inform the development of public policy, evidence that can assist in the prosecution of a crime, and insight that can bring peace of mind to families of the deceased.

Because the work done by Medical Examiners is so important to our community, we have worked diligently to develop and maintain exceptionally high standards for our program. I am proud to say, we have succeeded. The Kent County Medical Examiner program has been recognized nationally as a model medical examiner program, and several of our staff are similarly recognized. Kent County program staff were integral in the development of national standards for medicolegal death investigations by the U.S. Department of Justice, and three of our staff have been certified by the American Board of Medicolegal Death Investigators.

However, while the high standards to which we adhere provide the foundation for quality investigative practices, it is the practitioners - - Medical Examiners and Medical Examiner Investigators -- who ultimately yield results. Within the framework of investigative protocols, Medical Examiners and Investigators must have latitude for judgment and the discretion to exercise it accordingly. I have always sought to direct our Medical Examiner program in a manner that takes full advantage of the professional training and experience of the Kent County Medical Examiners and Investigators, and continue to be an advocate for their expertise as a critical component of a quality program.

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. Once again, I also wish to express my deepest gratitude to the excellent staff of the Kent County Medical Examiner program, with a special thank you to Cam Fulvi who retired in 2001 after more than 15 years as an Administrative Assistant with the Medical Examiner program. It is my pleasure to present the Kent County Medical Examiner's 2001 Annual Report.

Sincerely,



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

# Office of the Kent County Medical Examiner

700 Fuller N.E., Grand Rapids, Michigan 49503  
 phone (616) 336-3021, fax (616) 336-3943  
 Medical Examiner Exchange (616) 242-6700

## Medical Examiner Program Personnel

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

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

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

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

Jason Chatman  
 Medical Examiner Investigator

Richard Washburn  
 Kent County Conveyance Specialist and Scene Investigator

John T. Connolly  
 Medical Examiner Investigator

Susan Atwood  
 Administrative Assistant, Spectrum Health - Blodgett Campus

Paul R. Davison, D-ABMDI  
 Medical Examiner Investigator

Carmen M. Perez  
 Medical Transcriptionist

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

Camilla M. Fulvi  
 Administrative Assistant (retired 10/01)

Martha J. Scholl, D-ABMDI  
 Medical Examiner Investigator

Amy Kjaer  
 Clerk/Typist II

## Board Certification

The American Board of Medicolegal Death Investigators (ABMDI) sets quality and process standards for death investigations. Medical Examiners who pass the certification requirements of the American Board of Medicolegal Death Investigators are designated as Diplomats and use the letters "D-ABMDI" following their names.

## Medical Examiner Program Expenditures, 2000 and 2001

	2000		2001	
	Amount	Percentage	Amount	Percentage
Medical Examiner (compensation)	\$113,570	13.1%	\$126,333	13.7%
Autopsies	620,257	71.1%	622,413	67.5%
Cadaver transportation	58,531	6.7%	69,290	7.5%
Support services	34,379	3.9%	29,625	3.2%
Administration	37,700	4.6%	75,000	8.1%
<b>Total</b>	<b>\$864,437</b>	<b>100.0%</b>	<b>\$922,561</b>	<b>100.0%</b>
<b>Average cost per case investigated</b>	<b>\$808</b>		<b>\$876</b>	

# 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 County's prosecuting attorney, the Michigan 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 an autopsy, however, an autopsy is generally ordered in certain types of cases, and for deaths that occur under certain circumstances (listed below, right), to determine more accurately the cause and manner of death.

## 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, falls, 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.

# Introduction

---

This has been an eventful year for the Kent County Medical Examiner's program, notwithstanding the events of September 11, 2001, and the acts of bioterrorism that followed. The ME Program participated in recertification through the National Association of Medical Examiners (NAME), while the search for a replacement for Dr. Douglas Mack as Chief Medical Examiner was successfully concluded.

The NAME recertification process noted two deficiencies in the Kent County Medical Examiner program, and awarded provisional certification. The first deficiency noted was in the tracking of cases declined by the Medical Examiner. Declined cases occur when the Medical Examiner determines that the circumstances surrounding a death do not warrant the involvement of a Medical Examiner. This deficiency has already been addressed and all declined cases are now entered into the Kent County Medical Examiner's database, and will be reported in subsequent ME annual reports.

The second deficiency was a lack of morgue space. The Kent County Medical Examiner program contracts with Spectrum Health – Blodgett Campus for morgue space. However this morgue is a private entity and is also used for non-ME cases. Because the Medical Examiner program will play a critical role in planning to assure an adequate response to bioterrorism and pandemic influenza outbreaks (in addition to the day-to-day activities of the

## Understanding Medical Examiner Program Data

The Kent County Medical Examiner's program allows the development of unique data that can be used for a variety of community health planning purposes. Kent County ME data are also shared with academic, state, and federal programs on all work-related deaths, asthma deaths, and deaths where a (consumer) product may be involved. This data sharing allows for the analysis of events (deaths) that occur infrequently in most communities by aggregating data across counties or states.

However, inasmuch as aggregated data can be useful for understanding mortality trends, different program models and investigation criteria limit the usefulness of ME data for making comparisons from one jurisdiction to the next using local data. In addition, Medical Examiner data is not a random nor representative sample of all deaths that occur in Kent County, and, indeed, may represent a segment of our population that is more vulnerable to accidental, violent, drug-related, or otherwise medically unattended deaths. However, while ME cases tend to represent the *distribution* of all deaths (i.e., all causes of death) in Kent County, they are weighted to the younger end of the age spectrum (90 to 95% of

office), the issue of morgue space may pose some difficult choices for the Medical Examiner program and the County in the coming years. The need to be adequately prepared for these potential threats coupled with a growing County population is increasing demand for Medical Examiner capacity. Convening a public task force to address the future needs of the Medical Examiner system in Kent County may set the stage for progress towards these ends and deserves careful consideration.

The search for a replacement of Dr. Douglas A. Mack was superimposed on the recertification process. Dr. Mack continued in his role as Chief Medical Examiner throughout 2001, and successfully guided the program through recertification. While the search for a new Medical Director and Chief Medical Examiner proved unsuccessful in 2001, Dr. David Persaud has been hired to fulfill this role for Kent County beginning July, 2002.

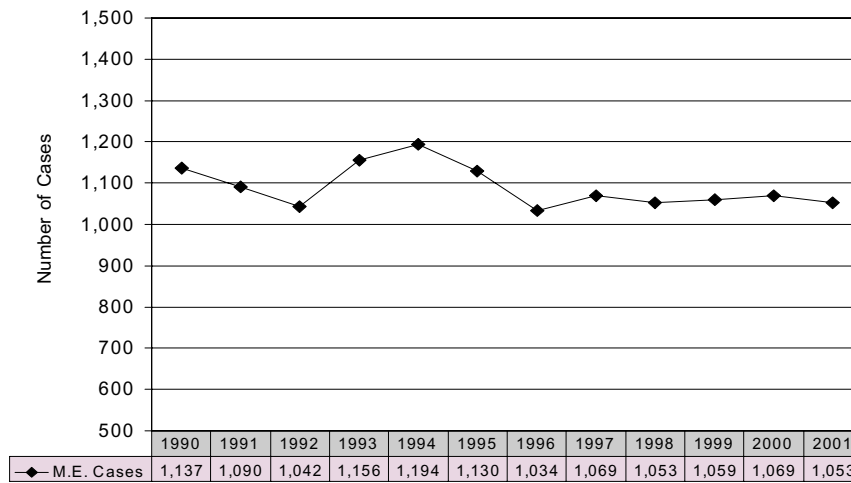
Born and raised in Ontario, Canada, Dr. Persaud is a graduate of York University in Downsview, Ontario, and of the University of Toronto Medical School. He was most recently a senior resident in a Master of Public Health and Preventive Medicine program at the University of Michigan in Ann Arbor, during which he had public health rotations at the Washtenaw County Health Department and the Michigan Department of Community Health. Prior to coming to Michigan, Dr. Persaud was in family practice in Ontario.

children's deaths are investigated whereas approximately 50% of deaths to older adults become ME cases). Medical Examiner data can be thought of most accurately as the "population of all sudden or unexplained deaths." As such, ME data can provide unique insights into mortality patterns over time, as well as for several causes and manners of death. For example, all traffic fatalities, homicides, and suicides (among others) are investigated by the Medical Examiner; therefore, ME data represent a complete sample of all Kent County deaths that fall within these categories.

The Kent County Medical Examiner also participates in the Michigan Medical Examiner Database, administered through the Michigan Public Health Institute (MPHI). The MPHI database collects identical and comprehensive data about deaths that occur in participating jurisdictions (currently about 50% of Michigan counties), allowing comparisons between jurisdictions or between a single jurisdiction and the state as a whole, as well as enhanced epidemiology of mortality within a jurisdiction. Many of the tables in this report were developed using Kent County data from the MPHI Medical Examiner data base.

# 2001 Medical Examiner Caseload

## Kent County Medical Examiner Cases, 1990-2001



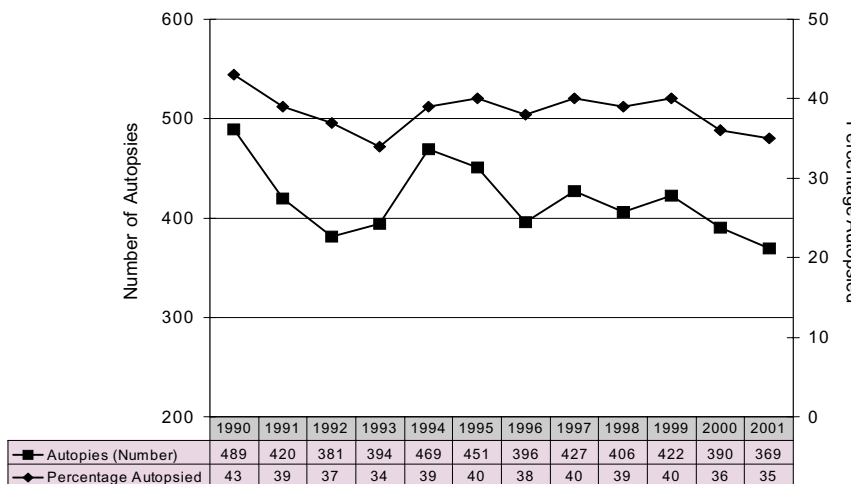
## Caseload

The Kent County Medical Examiner program investigated 1053 cases (deaths) in 2001, continuing a downward trend that has been prevalent since 1995. This trend raises the question of capacity to investigate all cases that fall under the Medical Examiners law (P.A. 181 of 1953, as amended). Tracking declined cases may allow more evidence to aid in elucidating issues related to capacity of the program to fulfil its statutory responsibility.

## Cases Autopsied

A Medical Examiner will investigate a death when 1) the cause and manner of death cannot be determined by a medical history; 2) when it is necessary to confirm the presence of legal and illegal substances (e.g., alcohol or non-prescription drugs) and determine if they contributed to the death; and 3) when an autopsy is necessary as part of a criminal investigation (e.g., homicide) to gather evidence for the prosecution of a crime. The number of cases autopsied fell in 2001 to 35% of all cases, again raising concerns that capacity may influence the decision to take a case and request that an autopsy be performed.

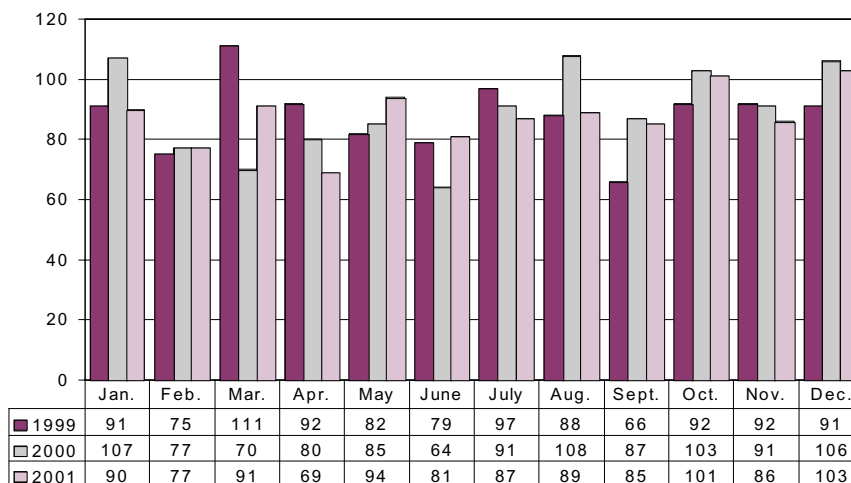
## Percentage of Medical Examiner Cases with Autopsy, 1990-2000



## Caseload by Month

The average monthly caseload for 2001 was 87.8 cases (three year 95% Confidence Interval [CI] 82.9 – 91.7). Three months were above the 95% CI (May, October, and December), and three months below (February, April, and June).

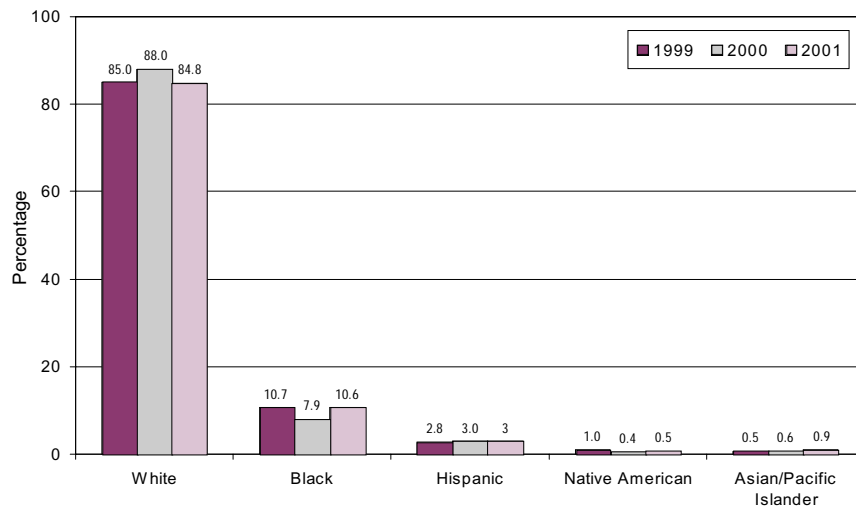
## Kent County Medical Examiner Caseload by Month, 1999-2001



Kent County residents represented 83% of cases in 2001, somewhat lower than preceding years. Consistent with this finding is that only 85% of the deaths investigated actually occurred in Kent County. There were 29 other Michigan counties represented in Medical Examiner case data during 2001 (people from other counties who died in Kent County, or autopsies performed at the request of other counties).

# Demographics of Medical Examiner Cases

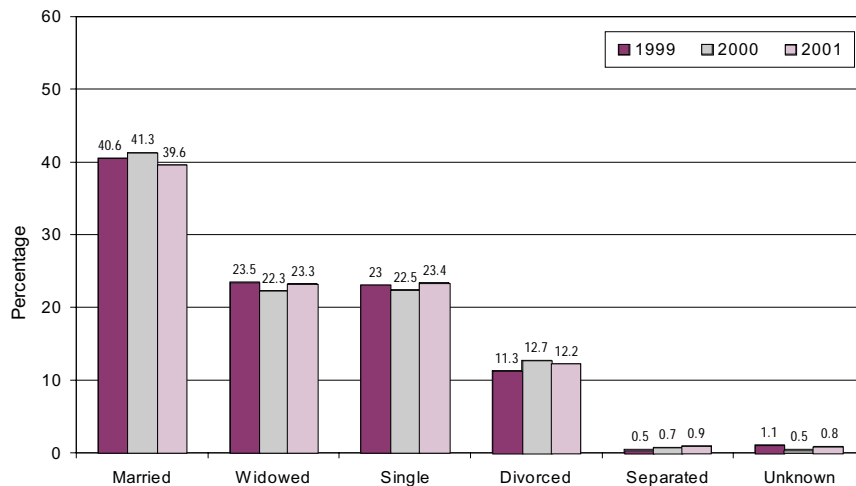
## Medical Examiner Cases by Race/Ethnicity, 1999-2001



## Race and Ethnicity

The distribution of decedents by race/ethnicity is similar to 2000 census data for all populations except by persons of Hispanic descent. Whites still comprise the majority of cases (84.8%), and African Americans represent the second largest population represented (10.6%). The distribution by Hispanic ancestry represents 3% of the medical examiner caseload, while 2000 census data suggests that approximately 7% of Kent residents are of Hispanic descent.

## Medical Examiner Cases by Marital Status, 1999-2001

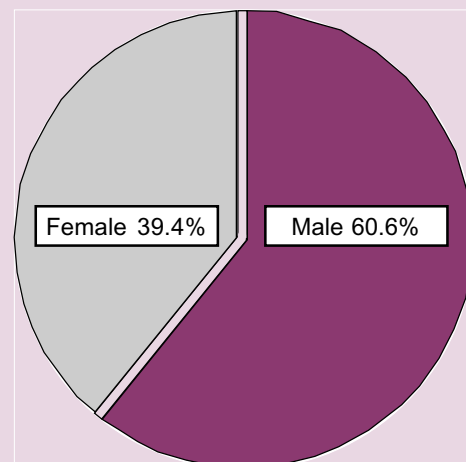


## Marital Status

Some studies have suggested that being married is beneficial to health, and that married people may live longer than people who are not married. While research is still inconclusive on this point, Kent County ME data shows some interesting trends in marital status. Although the distribution of ME cases by marital status shows that married people make up the single largest group (just under 40%), individuals who are not married -- those who are single, widowed, divorced, or separated -- combined made up 60% of ME cases in 2001. A similar distribution was seen in both 1999 and 2000.

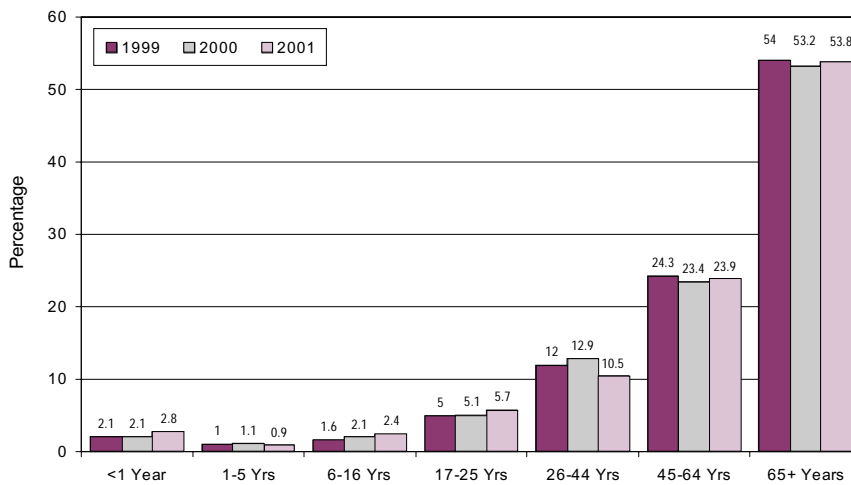
## Medical Examiner Cases by Sex, 2001

Consistently, males represent the majority of deaths whose cause, manner, or other circumstance are likely to be referred or investigated by the Medical Examiner. Males are more likely to die as the result of suicide, homicide, or motor vehicle accidents, and still represent the majority of natural, sudden and unexpected deaths -- largely due to arteriosclerotic cardiovascular disease (ASCVD). Nationally, there have been increases in sudden deaths due to ASCVD in females, a disturbing trend considering the opposite is true for males (consistent decreases in sudden deaths due to ASCVD over the past three decades). However, as in previous years, males comprised the majority (60.6%) of Medical Examiner cases in 2001.



# Demographics of Medical Examiner Cases

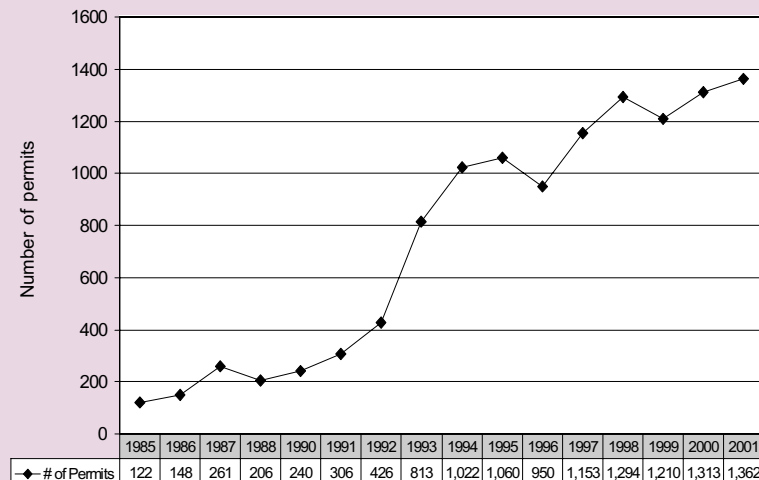
## Medical Examiner Cases by Age at Death (Number), 1999-2001



## Age of Deceased

The age distribution for 2001 is similar to 2000, with a slight decrease in the 26–44 year old group. There were slightly higher distributions in children less than one year; children six to 16 years of age; and in the 17–25 year old age groups. The distribution of Medical Examiner cases by age is somewhat skewed by the nature of the program: deaths to older adults where the medical history and/or recent circumstances are suggestive of the cause and manner of the death are less likely to warrant Medical Examiner investigation.

## Cremation Permits Issued, 1985-2001



## Cremation and Burial

For many, cremation has become an acceptable alternative to more traditional burial methods. All cremations in Michigan must have a permit, and the Medical Examiner office issues cremation permits to Funeral Directors in accordance with Michigan law.

Since 1985 -- when only 122 cremation permits were issued -- the number of cremation permits issued by the Medical Examiner's Office has increased tenfold, with the largest increases occurring between 1992 and 1995. In 2001 there were 1,362 cremation permits issued (many are issued for deaths that are not referred to the Medical Examiner), representing approximately one-third of all deaths in Kent County. This trend is consistent within the subset of deaths referred to the Medical Examiner: approximately one-third of ME cases are cremated while the remainder are interred.

## Cause and Manner of Death

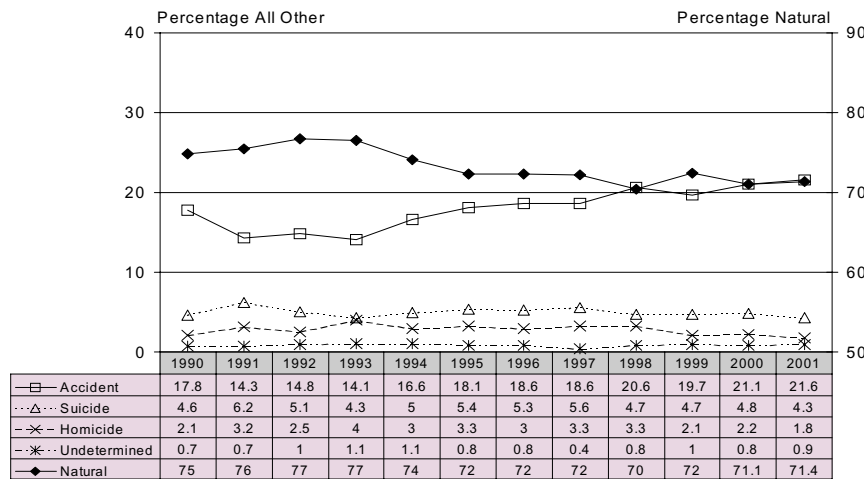
Medical Examiners determine both the cause and manner of death, but what is the difference? Generally, the **cause of death** refers to the specific circumstances that resulted in an individual's death. Heart attack, head injury, gunshot wound, are all examples of causes of death. The Medical Examiner records cause of death on the death certificate of the deceased. Most determinations of cause of death, without autopsy, are based upon the medical history of the deceased and the events surrounding the 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.' Natural deaths have typically accounted for over 70% of Medical Examiner cases.



# Manner of Death

## Medical Examiner Cases by Manner of Death, 1990-2001



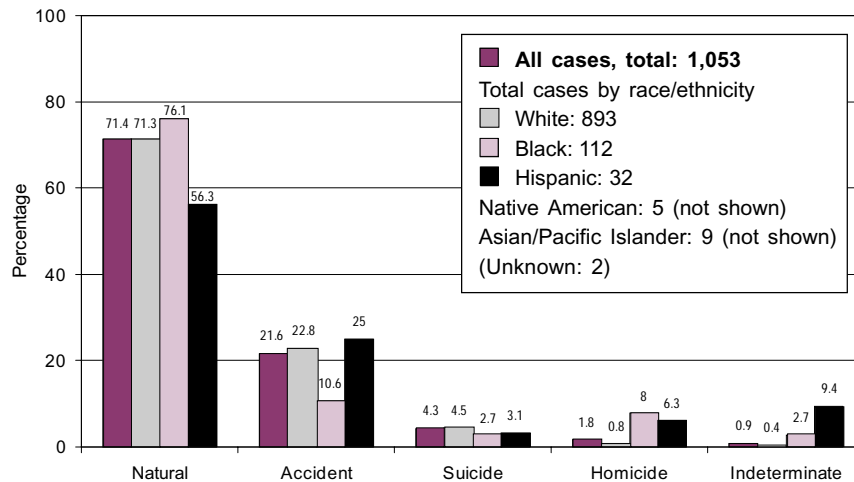
## Natural and Other Deaths

There have been minimal changes in the distribution of manner of death over the past decade. Most deaths investigated are those of natural manner (71%). Deaths due to accidental means made up 22% of cases in 2001, continuing an upward trend prevalent since 1993.

## Manner and Race/Ethnicity

Manner of death across racial and ethnic populations has been relatively stable since 1999. Persons of Hispanic descent have been consistently under-represented in medical examiner data. While the Michigan Department of Community Health will not release death certificate data by Hispanic ancestry, the Kent County Medical Examiner's office personnel make every attempt to identify ancestry (if not noted on the death certificate) when the surname of the deceased is of Hispanic origin or the residence of the deceased is within areas of the county known to be primarily Hispanic. (Asian/Pacific Islander and Native American populations are not represented on graphs in this report due to insufficient numbers of cases.)

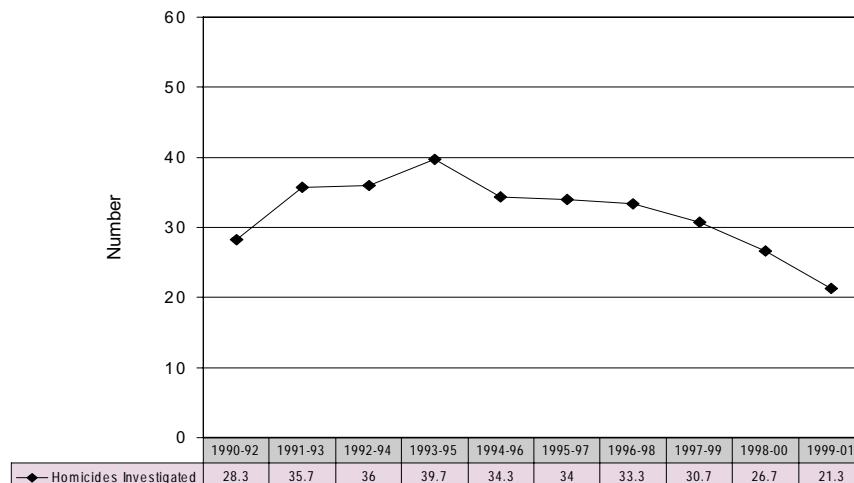
## Manner of Death by Race/Ethnicity, 2000



## Homicide

There were 19 homicides investigated by the Kent County Medical Examiner in 2001 continuing a downward trend prevalent since 1994, when there was a decade high of 46 homicides. African Americans still represent the majority of homicide cases and comprised 47% of all homicides in 2001 (total of nine: 8 males and 1 female), a decline from an average of 13 per year during the 1990's. White and Hispanic populations made up 37% and 10.5% (respectively) of homicides in 2001. Using three-year moving averages provides a more stable representation of the trend during the 1990's. In general, the most current average represents a 24.7% decrease in homicides since 1990-92, and a 46.3% decrease from the 1993-95 average.

## Kent County Homicide, Three-Year Moving Averages, 1990-2001



# Manner of Death

## Suicide

There were 45 suicides in Kent County in 2001, significantly less than the average from the past decade (56). As in previous years, White persons made up the majority (91%) of suicide cases in 2001, followed by African Americans (6.6%) and persons of Hispanic ancestry (2.2%). As has historically been the case, males comprised the majority (80%) of suicide cases in 2001.

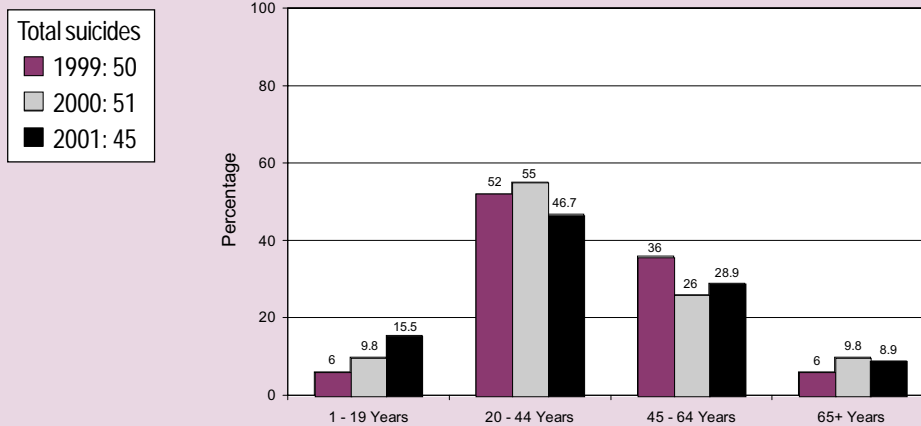
A disturbing trend over the past three years is the consistent increase in the number of cases in the youngest (ages 1-19) age group. In 2001, there were seven suicides in the 1-19 age group (there were five in 2000, and three in 1999).

The Kent County Child Death Review (CDR) Team, noting this increase as a part of their monthly review process, requested additional information on these cases (and teen suicides generally) from Kent County Community Mental Health and

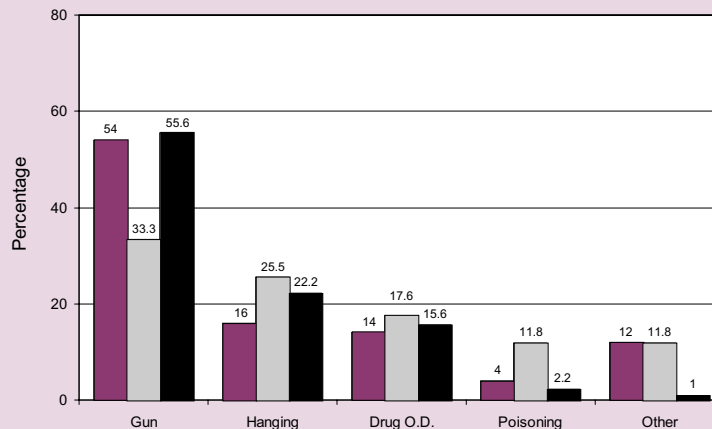
the police agencies that investigated the cases. Believing that the majority of child deaths are preventable, the CDR Team was interested in reviewing psychometric instruments, and other procedures, that may be used to alert parents, teachers, and guidance counselors to the possibility that a child is considering ending their life. While no recommendations were made by the CDR Team, several member agencies (including the Kent County Sheriff's Department and Community Mental Health) participated in the development of a psychometric instrument currently being used in some schools in Kent County.

With respect to the method used, the greatest change in 2001 was an increase in the distribution of suicides where a firearm was the lethal agent employed. This increase compares to the distribution from 1999, and reflects decreases in the use of carbon monoxide (poisoning) and other methods (e.g., use of sharp objects to elicit death by exsanguination).

Suicide Cases by Age, 1999-2001

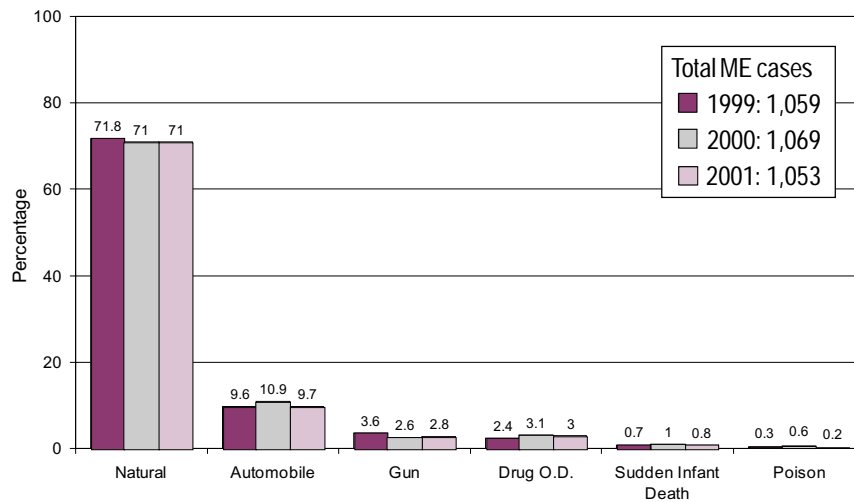


Suicide Cases by Method Used, 1999-2001



# Cause of Death

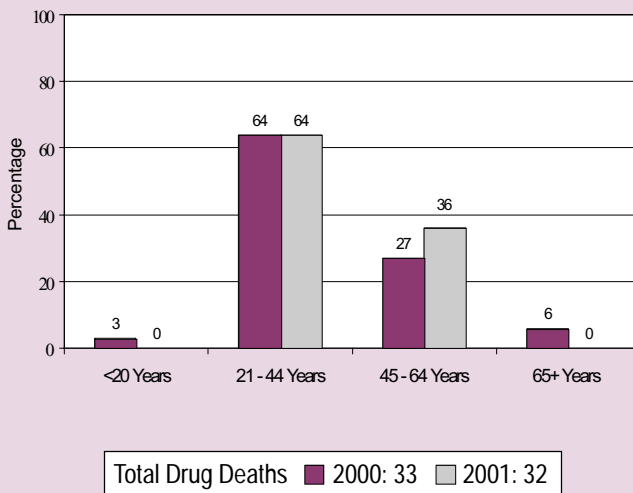
## Medical Examiner Cases by Cause of Death, 1999-2001



## Natural and Other Causes

The Medical Examiner records cause of death on the death certificate of the deceased. Most determinations of cause of death, without autopsies, 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. Beginning with last year's annual report, selected causes of death are examined in more detail. This report features expanded information on drug deaths, vehicle-related deaths, and accidental deaths.

## Drug Deaths by Age, 2000-2001

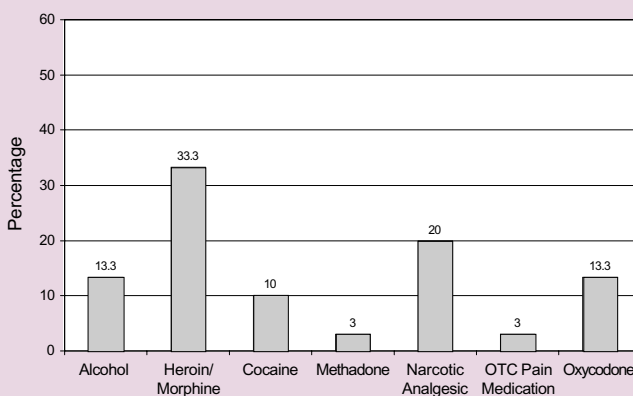


## Drug Deaths

In 2001, there were 32 Medical Examiner cases where drugs (including alcohol) were identified as the primary cause of death (3% of all Medical Examiner investigations). There were 28 other cases where acute or chronic drug abuse was listed as a contributing factor in the death.

The majority (73%) of deaths due to drugs were ruled accidental, while 23% of the drug deaths were determined to be suicide. Most of the drug deaths are males (66%), with 68% occurring in the decedent's or an acquaintance's home. By age, 64% of drug deaths were 21 to 44 years old, while only 6% were under age 25 (there were no drug deaths to persons less than 20 in 2001).

## Drug Deaths by Drug of First Mention (on Toxicology Report), 2001



When there is reason to suspect that a drug overdose occurred, the Medical Examiner requests a toxicology report to determine the drug(s) that was (were) found in the decedent's system, and the relative concentration (at the time of the death). Heroin/morphine was the most prevalent drug of first mention in 2001, with narcotic analgesics (e.g., Vicodin, Darvon) the next most common. Oxycodone (an opioid analgesic) and acute alcohol toxicity each accounted for 13% of drug overdose deaths in Kent County in 2001.

These data are similar to data reported by the Drug Abuse Warning Network (DAWN) for 2000. They report that 3 drugs accounted for the "vast majority" of deaths; heroin, cocaine, and alcohol accounted for 40 percent or more of all drug mentions nationally.

# Cause of Death

## Vehicular Deaths

There were 102 Medical Examiner cases in which a vehicle was a contributing factor in the death in 2001. The majority of vehicular deaths (59%) occurred while the decedent was driving a vehicle. An additional 27.4% of vehicular deaths occurred to a passenger in a vehicle, with 12.7% and 14.7% of cases located in the front seat or back seat, respectively. Overall, males represented the majority (60%) of vehicular fatalities.

Similar to the distribution of vehicular fatalities by age seen in 2000, the highest

percentage of vehicular deaths in 2001 was in the 21 to 44 year old age group. There was, however, a slight decrease in vehicular fatalities in this age group, as well as in the 45 to 64 year old age group. These decreases were met with a concomitant increase in fatalities to 19 and 20 year olds. Motorcycles and bicycles accounted for 10.8% of ME vehicular fatalities in 2001.

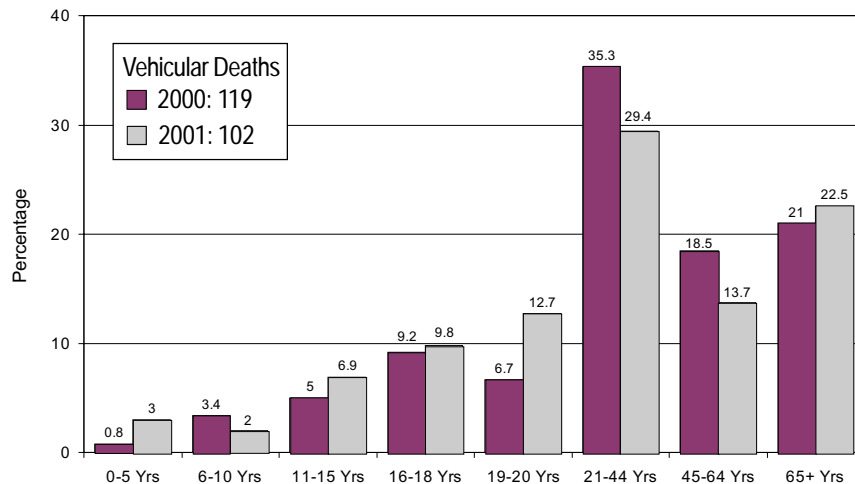
There were slightly fewer deaths associated with bicycles and motorcycles in 2001, with a total of five deaths to bicyclists and six deaths to motorcyclists. Mirroring a pattern

from 2000, none of the bicyclists were wearing a helmet, and three of the five were less than 15 years old (mean age = 25.8). The mean age of motorcycle deaths in 2001 was 35.7 years old, with a range of 19 to 48 years old. The vast majority (82%) of deaths to cyclists were male.

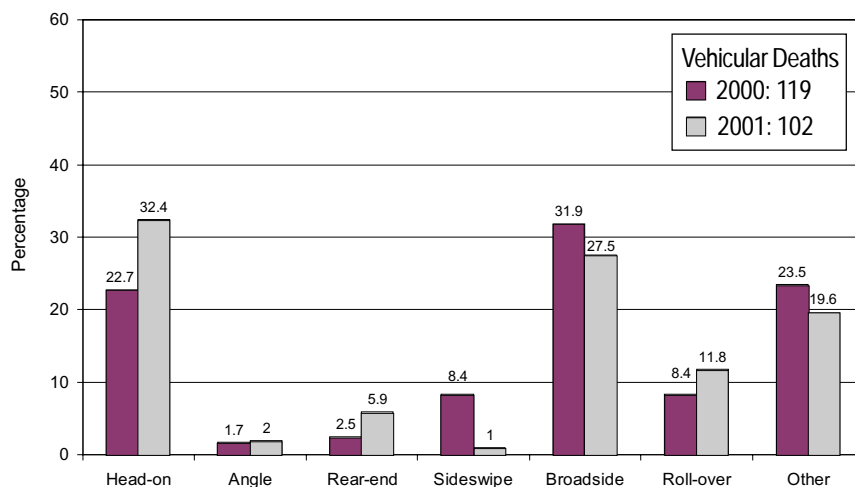
The Child Death Review Team reviewed all of the deaths to drivers of motor vehicles, who were less than 18 years old. The majority of these cases occurred in the evening hours and tended to occur on out-county roads. A recent article in the Journal of the American Medical Association reported a decline in vehicular injuries in Michigan following the implementation of the Graduated Drivers Licensing in 1997. Generally, Kent County Medical Examiner data agrees with this finding. Overall, there has been a decline in deaths related to motor vehicle collisions in the 16 to 19 year old age group. However, demonstrating a causal relationship between graduated licensing (or improved safety equipment in cars) and a decline in vehicular deaths among 16 to 19 year olds is difficult.

Alcohol was identified as a factor in 15% of the vehicular fatalities in 2001. This value was significantly lower than the previous two years (21% in 2000, and 24% in 1999).

## Vehicular Deaths by Age, 2000-2001



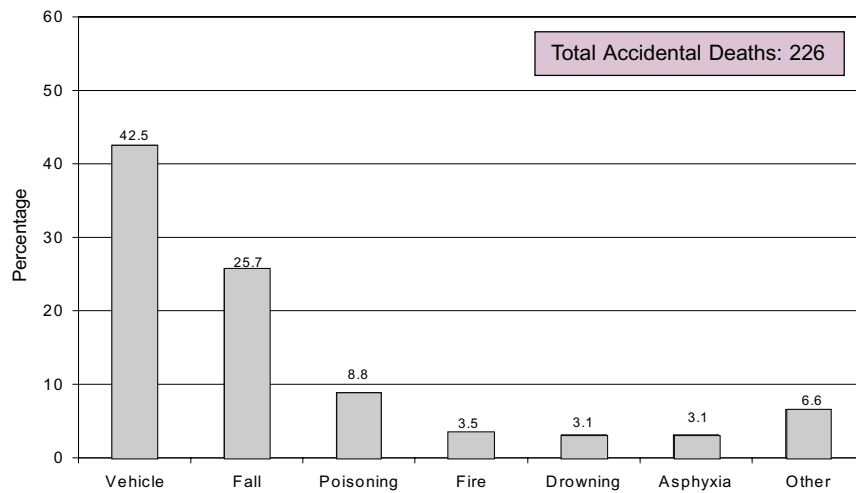
## Vehicular Deaths by Site of Vehicle Impact, 2000-2001



Finally, as in previous years, examining the data by site of impact suggests that head-on (32.4%) and broadside (27.5%) collisions together account for over half of Kent County traffic fatalities. Consistent with the finding for young drivers (fatalities tended to occur on out-county roads) head-on and broadside collisions are not as likely to occur on interstate (divided) highways, but rather, result from a driver running a stoplight or stop sign, or crossing the center lane of a two-lane road.

# Cause of Death

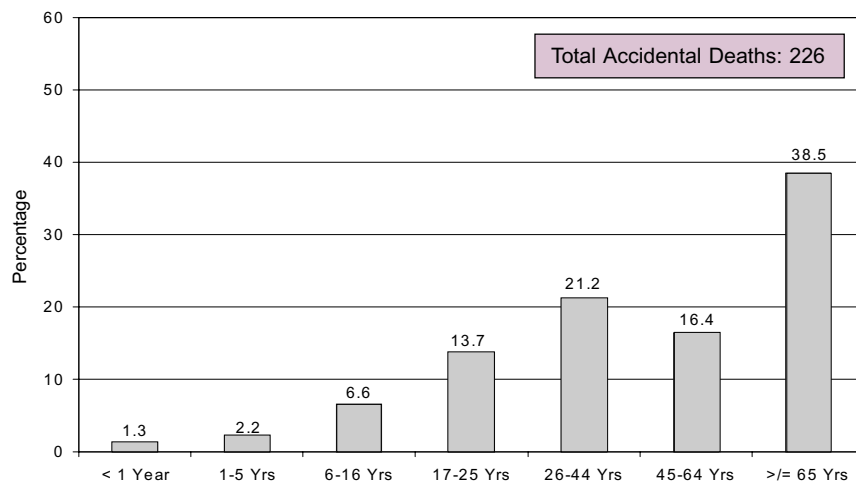
## Accidental Deaths by Cause, 2001



## Accidental Death

All together there were 226 accidental deaths investigated by Kent County Medical Examiners in 2001. Deaths resulting from vehicular (e.g., automobiles, bicycles, snowmobiles, etc.) accidents make up the largest (42.5%) category of accidental deaths. Falls represent the second most common cause of accidental death (25.7%). As with most ME cases, males comprise the majority of accidental deaths (62%). The average age for accidental deaths is 51.7 years old, with a range of less than one year to 106 years old.

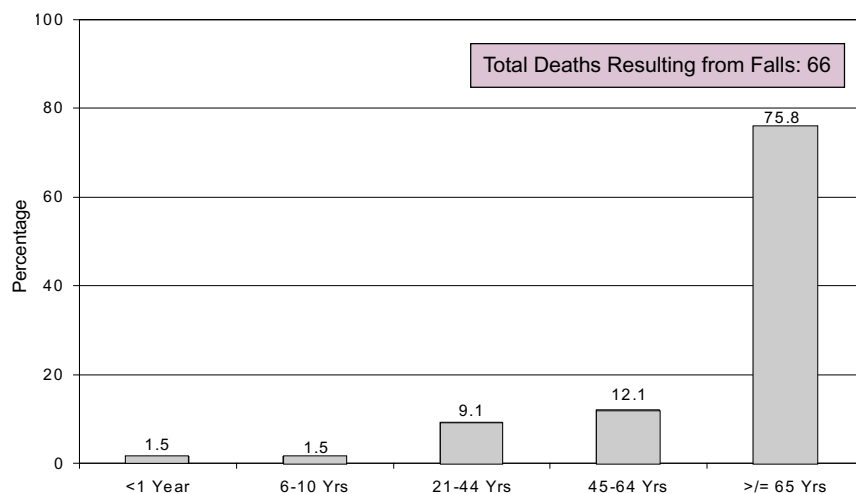
## Accidental Deaths by Age, 2001



The age distribution of accidental deaths is skewed to the younger age groups; consequently there are significant differences between all groups from 6 to 44 years old, when compared to all ME cases.

However, within the category of death resulting from a fall, there is a marked difference when compared to all accidental deaths. Males still comprise the majority of deaths from falls (59%), but the average age (74.7 years) is significantly higher than for all accidental deaths, and for all ME cases. The vast majority (75.7%) of deaths resulting from a fall is in the older age category (> 65 years) with 53% of these cases over 70 years old.

## Deaths Resulting from Falls by Age, 2001



In most cases of death from falls, death is not immediate, but rather results from complications as the result of the injury from the fall. Almost half of the deaths result from complications from a bone fracture, with 30% occurring to the hip (femur), and 38% result from trauma to the head (craniocerebral trauma). ME data suggest that the majority of falls (41%) occur from no more than standing height, and 23% from stairs or ladders. Nationally, it is reported that yearly, one in three older adults will suffer fractures or trauma as the result of a fall.

## **Kent County Medical Examiner, 2001 Annual Report**

©2002 Kent County Medical Examiner  
Grand Rapids, Michigan

Produced by:  
Tim Bolen, Epidemiologist  
Michael Mullet, Community Relations Coordinator

This publication may be reprinted or reproduced  
without permission.

Copies of this report are available on the World Wide Web at:  
[www.accesskent.com/health](http://www.accesskent.com/health)

Kent County Medical Examiner  
700 Fuller N.E.  
Grand Rapids, Michigan 49503  
(616) 336-3021

## **Notes on this PDF publication**

The report contained in this PDF file was published in print by the Kent County Medical Examiner's Office in July 2002. The colors used in this PDF file vary slightly from the colors used in the printed version, however the content is identical, with the exception of this paragraph. This page is the inside of the back cover. The content of this report is public information and may be downloaded, stored, printed, copied, and distributed, in print or via e-mail or other electronic means, without permission.

*Kent County Medical Examiner, 2001 Annual Report* printed and electronic versions © 2002 Kent County Medical Examiner, Grand Rapids, MI.