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| TITLE | An Analysis of Suicides among Those Who Resided on Farms in Five North Central States 1980-1985. |
| INSTITUTION | Minnesota State Dept. of Health, Minneapolis. Center for Health Statistics. |
| PUB DATE | [85] |
| NOTE | 66p. |
| PUB TYPE | Reports - Research/Technical (143) |
| EDRS PRICE | MF01/PC03 Plus Postage. |
| DESCRIPTORS | Age Differences; *Death; *Farmers; *Rural Farm Residents; Self Destructive Behavior; Sex Differences; *Suicide; *Trend Analysis |
| IDENTIFIERS | *United States (North Central) |

ABSTRACT

This document presents data from phase one of a three-phase study examining suicide rates among farm residents in five states (Minnesota, Montana, North Dakota, South Dakota, Wisconsin) between 1980 and 1985. The first phase is described as involving identification of suicide cases and an initial analysis of their causes. The report contains a literature review, a listing of study objectives, and a description of the study methodology. Results are reported for each of four populations of farm residents identified as being at risk for suicide: farmers, farm women, farm workers, and children and adolescents. Areas discussed for each of these groups include trends across time; age, sex, and marital status; temporal dimensions; and mechanism of injury. It is noted that most of the 797 reported suicides were among farmers (N=589), with very few reported suicides of farm women, farm workers, or children and adolescents, and that death resulting from firearms led all methods involved in suicides among farm residents regardless of occupational cohort. The accuracy of suicide statistics is considered and recommendations for further study are made. Appendices contain information on baseline population data (1980-1985), suicide statistics (1980-1985), certificates of death, and data coding formats. (NB)

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ED281108

# AN ANALYSIS OF SUICIDES AMONG THOSE WHO RESIDED ON FARMS IN FIVE NORTH CENTRAL STATES 1980-1985

A Collaborative Study Conducted by

The Minnesota Department of Health
The Montana State Department of Health and Environmental Sciences
The North Dakota State Department of Health
The South Dakota State Department of Health
The Wisconsin Department of Health and Social Services

CG019842

Report Prepared by the

Minnesota Department of Health
Minnesota Center for Health Statistics

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## ACKNOWLEDGEMENTS

This phase of the analysis of suicides which occurred among those residing on farms would not have been possible without the assistance of numerous individuals and agencies. To each we say "thank you" since studies of intentional injury are difficult to field under the best of circumstances.

The field work required for this study was substantial. To all rural physicians with whom we worked, a debt of gratitude is acknowledged. In addition, medical examiners, coroners, morticians, and county sheriffs were very helpful in providing selected information about cases included in this study.

Staff within each respective state public health department labored to complete field inquiry, occupational coding data set development, and review of study analyses. In particular, appreciation is expressed to John Wilson of the Montana State Department of Health and Environmental Sciences, Mark Kinde and Larry Graf of the North Dakota State Department of Health, Doris Donner of the South Dakota State Department of Health, and Raymond Nashold of the Wisconsin Department of Health and Social Services.

A particular debt of gratitude is due Richard Rathge of the North Dakota State Census Data Center and Calvin Beale of the United States Department of Agriculture for their timely and essential technical assistance afforded us when constructing population estimates of those who resided on farms across the five-state area. Indeed, without their help this study could not have been completed.

Gratitude is also due staff of the Violence Epidemiology Branch of the Centers for Disease Control for helpful review and constructive criticism of the study protocol and operational definition of the suicide event. In addition, Susan Gerberich of the School of Public Health, University of Minnesota was very instrumental in locating resources and assisting in deployment of the epidemiological model reflected in this study.

The analyses which follow and the recommendations which have been developed reflect scientific inquiry into the etiology of suicide occurring among those residing on farms in the North Central and high plains areas of the U.S. Although a study with broader geographical coverage was clearly desirable, human resource and time constraints dictated otherwise. It is our hope that this analysis will contribute to the prevention of suicide events occurring in rural America.

Jane Daymond
Paul Gunderson
Minnesota Center for Health Statistics

## EXECUTIVE SUMMARY

Public attention has recently focused on the plight of farm and ranch residents who have experienced profound economic change in the 1980's. This attention has several facets, one of which is the status of mental health thought to be associated with such change.

In late 1985 the state public health departments of North Dakota and Minnesota were queried about changes in suicide rates among farmers. Responding to such inquiry required fielding a study which spanned several years, several state jurisdictions, and several stages since suicide is typically a rare event. Accordingly, the years chosen for this surveillance began in 1980 and ended in 1985. The five states contributing data to this study included Minnesota, Montana, North Dakota, South Dakota, and Wisconsin. The study was divided into three stages. The first stage involved identification of suicide cases and an initial analysis of their cause. The second and third stages represent future work and involve detailed analysis of the causes of these suicide deaths.

All deaths which occurred within the surveillance period constituted the universe, subsequently only those cases whose death was classified on the death certificate as "suicide" or "undetermined" and which involved victims who resided on farms or ranches were retained. Four populations residing on farms or ranches were defined "at risk" for suicide: farmers, farm women, farm workers and children and adolescents. "Hobby farmers" and those defined by the U.S. Census Bureau as "other operators" were excluded since the number of reported suicides was too few to permit meaningful analysis.

The rate of suicide among farmers varied from 41 events per 100,000 farmers at risk across the five states to 58 events per 100,000 farmers. The rates for farm workers and farm women were much lower across the surveillance period, 3-5 events and 1-2 events per 100,000 respectively. These rates stand in contrast to other observed suicide rates among adult white male populations of 31 events per 100,000 people in 1980 and among adult white females of 8 events per 100,000 people. Almost all farmers, farm workers, and children and adolescents who resided on farms and who committed suicide were male and white. The typical farmer at risk of suicide was 63 years of age, a farm woman at risk was typically 47 years of age, a farm worker 37 years of age, and an adolescent's median age of death resulting from suicide was 18 years.

Wisconsin and Montana reported proportionately more deaths to farmers resulting from suicide; Minnesota, North and South Dakota fewer deaths. Almost one half of these victims were married, 32 percent had never married. More married women who resided on farms committed suicide than unmarried women. There was an even balance in married and unmarried status between farm

workers who were suicide victims, while most adolescent victims were never married.

Little seasonal variation in month of death was observed among farmers or farm workers, however the first quarter of the calendar year held 30 percent or more of all events occurring among children and adolescents, and the second quarter held 35 percent of all events occurring among farm women. Thirty-two percent of all suicides which occurred to farmers happened on Sunday and Wednesday, 46 percent of all events among farm women occurred on Friday and Saturday, 34 percent of all events which occurred to farm workers happened on Monday and Tuesday (although Saturday held the greatest proportion of a single day), and 53 percent of all adolescent victims suffered death during Friday through Sunday.

The greatest concentration of suicide events among farmers was reported to have occurred between 9:00 a.m. and noon of a typical day. This was also true for farm women, however the interval between 6:00 p.m. and 9:00 p.m. held just as many events. The interval beginning at midnight held numerous events occurring to farm workers, as did the interval from 9:00 a.m. to 12 noon. The observed pattern among adolescents was markedly different . . . 23 percent of all events occurred between midnight and 6:00 a.m.

Death resulting from firearms led all methods involved in suicide death among these victims regardless of occupational cohort. Gassing and hanging were a distant second as methods employed by victims. Some deaths resulted from drownings and ingestion of drugs.

This is the first phase of the planned three study phases. As a first phase it cannot answer the full range of questions attached to complex phenomena of this type. Accordingly, the five state public health departments are recommending use of outside funding in order to pursue other scientific inquiry which possess as a goal the discovery of significant etiology underlying suicide among those residing on farms and ranches in the North Central region of the United States.

## INTRODUCTION

The farm economy in the United States is reportedly at its lowest point in more than half a century. The economic toll on the farming community can readily be seen through a rising number of farmers unable to meet their loan payments, an increasing number of farm foreclosures and a net migration of people from farming areas. A recent U.S. Agriculture Department survey indicated that 31 percent of commercial farms are economically threatened, a level not matched since the Great Depression.[1] Speculation has unfolded about the toll on mental health of those farm families directly involved in this economic crises. One indicator of the state of mental anguish of people facing a chronic economic crisis is the suicide rate and its change over time - an indicator which suggests intervention if elevated rates are uncovered.

## REVIEW OF THE LITERATURE

To the present time, a firm definition of suicide has not been agreed upon by the medical, legal, behavioral science, administrative or religious communities. The number of suicides specified in the national vital statistics reflects the judgments and professional opinions of coroners, physicians and medical examiners who certify the medical/legal cause of death on the death certificate.[2] To these medical professionals, suicide is one of five possible modes of death; the other categories are "natural", "accidental" and "homicidal". When there is a question as to the mode of death, the death is recorded as "undetermined". The lack of a mutually acceptable definition for the modes of death may lead to confusion and differences in the final interpretation of findings from one locale to another. Many factors, including the qualifications of the certifying officers, the performance and/or comprehensiveness of an autopsy, and the availability of family or close friends for interview(s) affect the final classification. Currently, there is little standardization of these factors among the states.[3] In the present study all events were included where coroners, medical examiners or physicians classified the case as suicide.

Under-reporting of suicides in various national statistics is well recognized.[3,4,5] Some researchers suggest that the majority of cases allocated to the "undetermined" category are questionable suicides.[6] Certain categories of "accidents" also are believed to contain a significantly high proportion of suicides, and possibly visa versa, although the latter is less likely.[5,7]

Suicide was the tenth leading cause of death in the United States in 1980. Nationally, approximately 27,000 persons took their own lives in 1980, with males accounting for nearly three-fourths of these deaths.[2,3]

It is well known that suicide does not occur evenly across all groups in the population. Disproportionately high rates of

suicide have been documented among males,[3,8,9,10,11] whites and Native Americans,[2,3] the unemployed,[12,13] and young adults and the elderly.[2,3,8,10,14] Wilkinson and Israel[10] acknowledge the vulnerability of these groups to suicide, but they also point out that population composition affects the social interaction and the economic standing of a community , and that these patterns themselves may affect the suicide rates. Economic business cycles and fluctuations in suicide rates have been the focus of a number of empirical studies,[10,15,16] however there are few findings regarding which demographic groups within different economic climates may be exhibiting changes in their vulnerability to suicide.

Intentional self-destruction has been identified as an indicator of the quality of social relations in a community.[17] Marital and family breakdowns, physical and mental disorders, alcoholism, employment change and other significant "life events" are examples of disruptions in social relations. At the national level the highest suicide rates since 1900 occurred in 1932, during the great economic depression. The rate of suicides in the United States at that time was 17.4 per 100,000; the lowest rate was recorded in 1956 (9.8 per 100,000). Frederick[3] suggests that a significant contribution to this decline may have been the fact that the fifties were the so-called "Golden Years" of mental health resulting from flourishing interest in its efficacy.

Brenner[15] first provided evidence for a relationship between economic depression and social mortality patterns, including suicide. Subsequently, Wasserman[16] substantiated his conclusion that the national economy is inversely related to national suicide rates. In particular, Wasserman reported that it is essential to determine the mechanisms that lead to this change and to determine what social groups are most influenced by these economic changes.

Other studies on the relationship of economic business cycles and suicide rates have investigated unempolyment rates[18] and unemployment duration[16] as measures of economic downturn and predictors of stressful life-events. There is no literature exploring direct financial loss such as bankruptcy or the loss of a family inheritance as measures associated with economic hardships and stressful life-events.

The differing patterns of economic and social interaction between metropolitan and rural areas have been examined in relation to suicide trends. It is generally reported that suicide rates are highest in large cities, with small urban and rural areas experiencing lower rates.[2,3] Some studies on more narrowly defined geographic areas, however, have reported instances of higher rural rates[10,19] but these studies do not examine the different economic circumstances of metropolitan and rural regions.

Among the studies which have examined trends in suicide rates in rural communities, few have explored the occupational

divisions within those communities or the economic cycles that may be playing a significant role in social interaction patterns. One study, conducted for the period 1945 to 1949 on suicide cases in Michigan,[19] did look at the occupational group "farmers" and found that they experienced suicide rates almost twice as high as those of service workers who had the second highest rate at that time. For the purpose of shedding light on the current suicide risk for farmers, this particular study suffers from the fact that it refers to a time period almost 40 years ago, and as noted by the authors, the frequency of suicide among farmers was small and thus any interpretation of the findings must be treated with caution.

A more recent study conducted in a rural region in New South Wales, Australia, which examined the occupational groups of persons who committed suicide,[12] found that among women there was a disproportionately high incidence of suicides among those in "domestic duties" and, overall, the unemployed were at greatest risk of suicide. This study did not single out farmers as an occupational group, or determine the farm-relatedness of other occupational groups, and thus we do not know whether the elevated rates among the unemployed or those engaged in domestic duties were farm-related.

Based on the paucity of reported findings in the area of farm-related suicides and the current downturn in the farm economy, the time appears appropriate for furthering our understanding of these events.

## STUDY OBJECTIVES

The objectives of this epidemiological investigation were to:

- Document the incidence of suicides among farmers, their families and farm laborers across the surveillance period (1980-1985);
- Develop and document a "case-finding" protocol for analysis of rare death events occurring in a population;
- Explore (1) the preponderance of selected variables related to suicide, e.g., age, sex, race, marital status, temporal dimensions and type of injury, and (2) the relationship(s) which appear to exist among the variables, using an epidemiologic structure for the analysis; and
- Create a "data archive" which could support further analysis, including, for example, a case control (retrospective) study, an ecological analysis, and a prospective surveillance component for data years 1986-1989. This archive is very important since death certificates contain little or no data about specific causes for suicide. For example, they do not provide data about socioeconomic status, family structure, or relevant histories of chemical substance use or abuse, mental

illness or use of medical and/or mental health care.

It was hoped that this analysis would contribute to a more realistic identification of potential strategies for prevention of these events in the future.

## METHODOLOGY

Computerized death certificate files were accessed in each of the five states comprising this study.* Data relevant to all resident events that occurred from 1980 through 1985 constituted the original universe; subsequently, only those cases whose death was classified on the death certificate as "suicide" or "undetermined" were retained. Of these events, only those cases which matched one of the following criteria were included in this investigation:

1. Occupation was listed as "farmer", "farm laborer", or classified as "agriculture" or "farm." This definition typically includes occupational titles directly associated with farm enterprises such as farming and ranching but excludes fur ranching or pelt farming, logging, aquaculture, or truck farming. Analyses included dual occupations as long as farming was listed as one of the occupations (without regard to order of listing).

2. Occupation was listed as "housewife", "homemaker", etc., and her homemaking was based with a farm enterprise.

3. The person was younger than 20 years of age, had "student" or "unemployed" listed as the occupation and he/she was directly connected to a farm enterprise.

4. The person was 20 years of age or older, had occupation listed as "none", "unemployed" or "unknown", yet his/her occupational state was in fact directly linked to a farm enterprise.

Typically, cases which matched criteria 2, 3 and 4 or whose occupation appeared ambiguous had to be queried. In addition, queries were initiated when missing data were encountered anywhere on the death certificate. Field queries were initiated in the following sequential order:

1. Those cases where the residential address could possibly be that of a farm, or whose occupation was unstated, ambiguous or otherwise unclear, or whose "linkage" to a farm enterprise by virtue of family status required clarification were selected for additional followback. All followback was conducted by letter and phone

* The five states were: Minnesota, Montana, North Dakota, South Dakota, and Wisconsin.

queries.

2. The attending physician, medical examiner, or coroner was queried and asked to provide the additional data (in North Dakota this first contact was directed toward morticians).

3. If no response was elicited, or missing data were still encountered, subsequent followup was also initiated with morticians and/or county sheriffs.

Deaths to residents which occurred out-of-state were followed and relevant residential data were obtained through an interstate reciprocity agreement.

Because the population at risk of suicide must be connected to a farming enterprise, calculation of the state-specific denominators required explicit estimation methodology. Accordingly, consultation from the Economic Research Service of the U.S. Department of Agriculture was sought. This consultative process yielded a procedure whereby the population of farmers at risk was estimated for each year of the Surveillance Period. Calculation of the estimates required use of data from both the 1978 and 1982 Census of Agriculture[20,21] and regression lines were fitted to these data. Linear extrapolation was then used to project trends through 1985. In like manner, the estimates of farm laborers and farms were also developed. Estimates of the number of farm wives in each of the five states were generated using established female to male ratios observed in other cross-sectional survey activity.[22]

After all case data were obtained, univariate analysis was conducted utilizing the Statistical Package for the Social Sciences (SPSS).[23] A cluster analysis was also performed in order to attempt to identify a typology of suicide cases.[24]

In general, an epidemiological model that considers the interaction of the host (or individual), the agent, which is transmitted by a vehicle or vector, and the environment, provided a framework for this investigation.

Host variables typically include age, sex, genetic, cultural, mental, and physical characteristics. Selected host variables relevant to suicides were addressed.

Agents associated with suicides may include chemical, thermal, mechanical, or electrical energy. Mechanical energy, as an example, is the agent involved in firearm deaths. Transmission of this energy is facilitated by the vehicle. As opposed to a vector associated with illness, an example of a vehicle associated with suicides in firearm deaths is the bullet--generated by the gun. Consideration of the vector or vehicle is especially important, since preventive measures are often directed most successfully against the vehicles and vectors rather than against the physical or chemical agents they

transmit.

Conditions within the environment are an important part of the total model. Included could be temporal factors (month, time of day, etc.), commodity price cycles, federal farm policy shifts, etc. Interactions of the host and agent within the environment determine the final outcome--in this case, suicides.

The following data elements were included on the death certificate in each of the five states and constituted the variables relevant to this phase of the investigation:

a) Sex of deceased
b) Age of deceased
c) Cause of death (suicide or undetermined)
d) Type of injury that caused the death (ICD "E codes")
e) Marital status
f) Month in which injury occurred
g) Day on which injury occurred
h) Time of day that injury occurred
i) Occupation of deceased

The analytic limitations of this data set are recognized. For example, data pertaining to socio-economic status, commodity price cycles, climatic variations across growing seasons, family structure, histories of substance use or abuse, mental illness, use of medical and/or mental health care, or debt status of the farm operation are not included. Completion of this initial phase of analysis was, however, essential in order to permit an appropriately focused second and third phase to occur . . . phases during which data cited above would be collected and analyzed.

## RESULTS

A total of 797 suicides were reported to have occurred to residents of farms and ranches within the states of Minnesota, Montana, North Dakota, South Dakota and Wisconsin. Table 1 indicates suicides among farmers accounted for most events; all other events occurring to farm residents were proportionately few.

Table 1
Suicides Occurring to Farm Residents
by Occupational Status,
All Study States, 1980-1985

| Occupational Status | Total Suicides Reported | % of Total |
|---|---|---|
| Farmer | 589 | 74% |
| Farm Worker | 100 | 13% |
| Farm Women | 43 | 5% |
| Student | 42 | 5% |
| Dual Occupation Farmer[1] | 17 | 2% |
| Hobby Farmer | 2 | 1% |
| Other | 4 | |
| Total | 797 | |

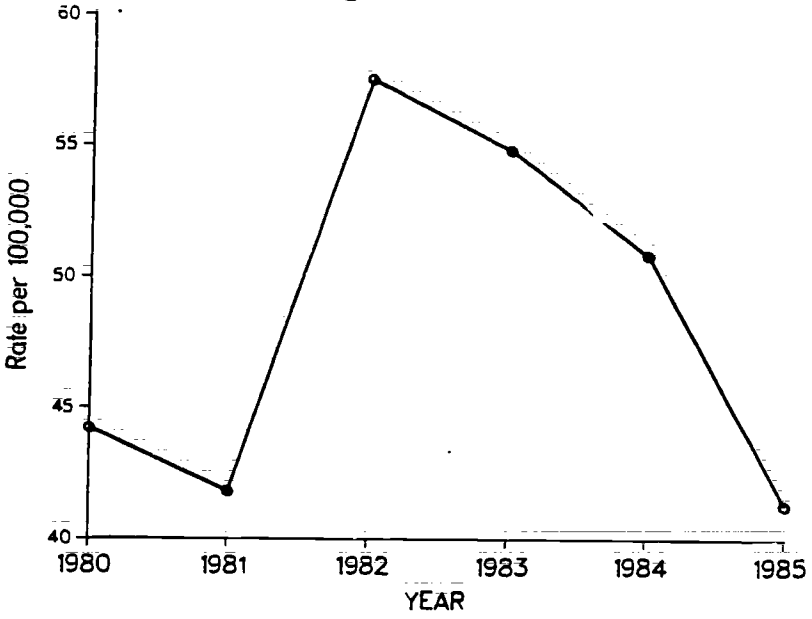
[1] Defined as operating an identifiable farm, typically 80+ acres, and also working in another occupational setting.

SOURCE: Minnesota Center for Health Statistics

## SUICIDE AMONG FARMERS

Figure 1 depicts change in the rate of suicide among farmers within the five states across the surveillance period of 1980-1985. The rate peaked in 1982 at 57.5 events per 100,000 farmers at risk, receding to 41 events per 100,000 farmers by the end of the surveillance period in 1985. In comparison, the rate of suicide for farm workers was much lower during the surveillance period, varying from 3 events per 100,000 workers in 1980 to 5 events in 1985.

Figure 1
Suicide Rates Among Farmers by Year,
All Study States, 1980-1985



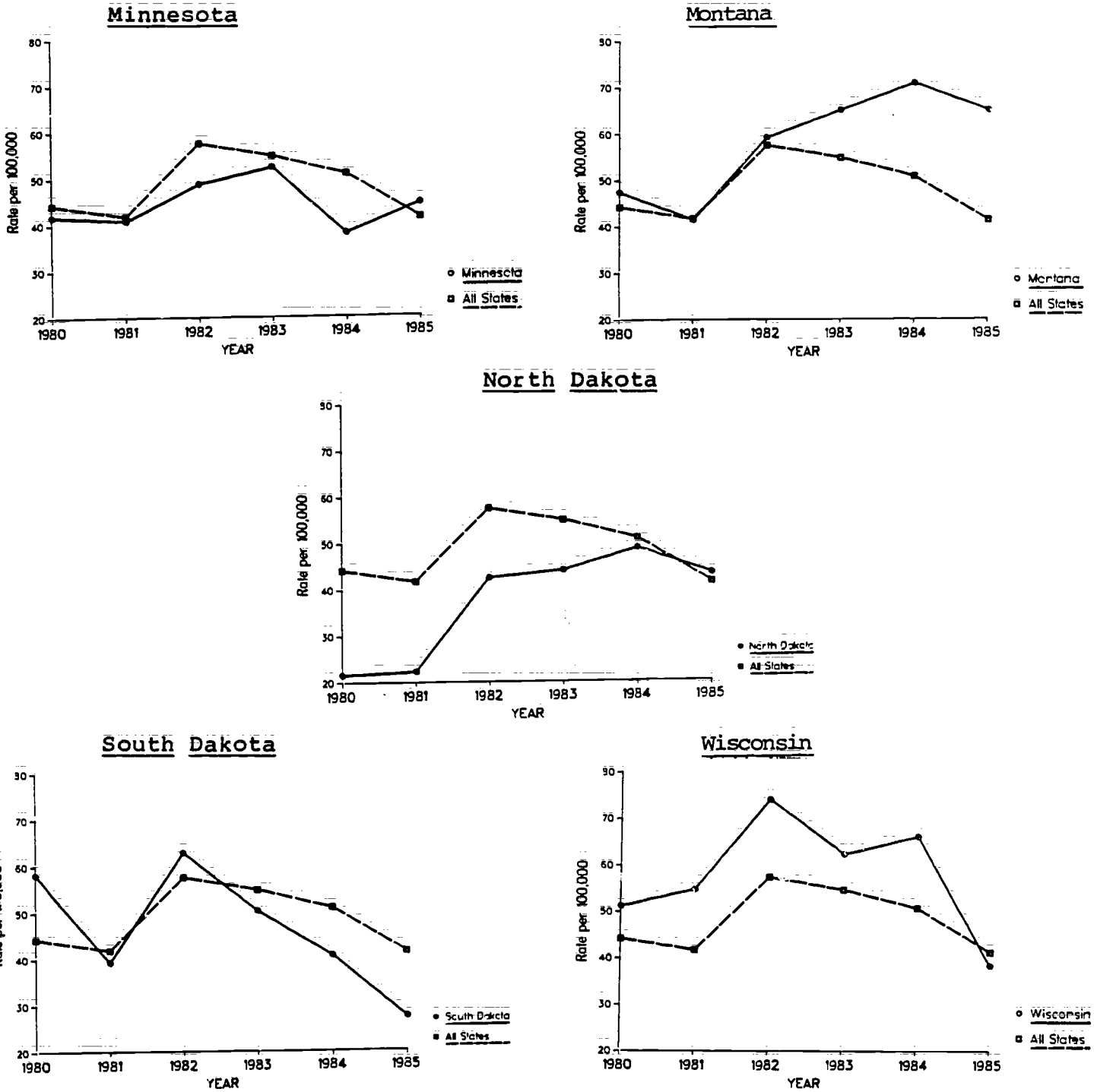

SOURCE: Minnesota Center for Health Statistics

State-to-state variation in suicide rate across the surveillance period is depicted in Figure 2. It can be seen that the highest death rate among farmers within each state occurred in the interval 1982-1984. South Dakota reported the highest suicide rate among farmers at the start of the surveillance in 1980 while Montana reported the highest suicide rate during the last year of surveillance in 1985. Wisconsin farmers experienced the highest suicide rate during any year with 74 events reported per 100,000 farmers, while North Dakota reported the lowest suicide rates during both 1980 and 1981 (22 suicide events per 100,000 farmers).

The proportion of suicides among farmers within the five states is depicted in Figure 3. With 33 percent of all farmers within the five state area, Minnesota reported 31 percent of all suicides during the surveillance period. In like manner North Dakota possessed 15 percent of all farmers and reported 11 percent of all suicides and South Dakota reported 14 percent of all suicides with 15 percent of all farmers. On the other hand, Wisconsin possessed 28 percent of all farmers, yet reported 34 percent of all suicides and Montana reported 10 percent of all suicides with 8 percent of all farmers enumerated during the surveillance period.

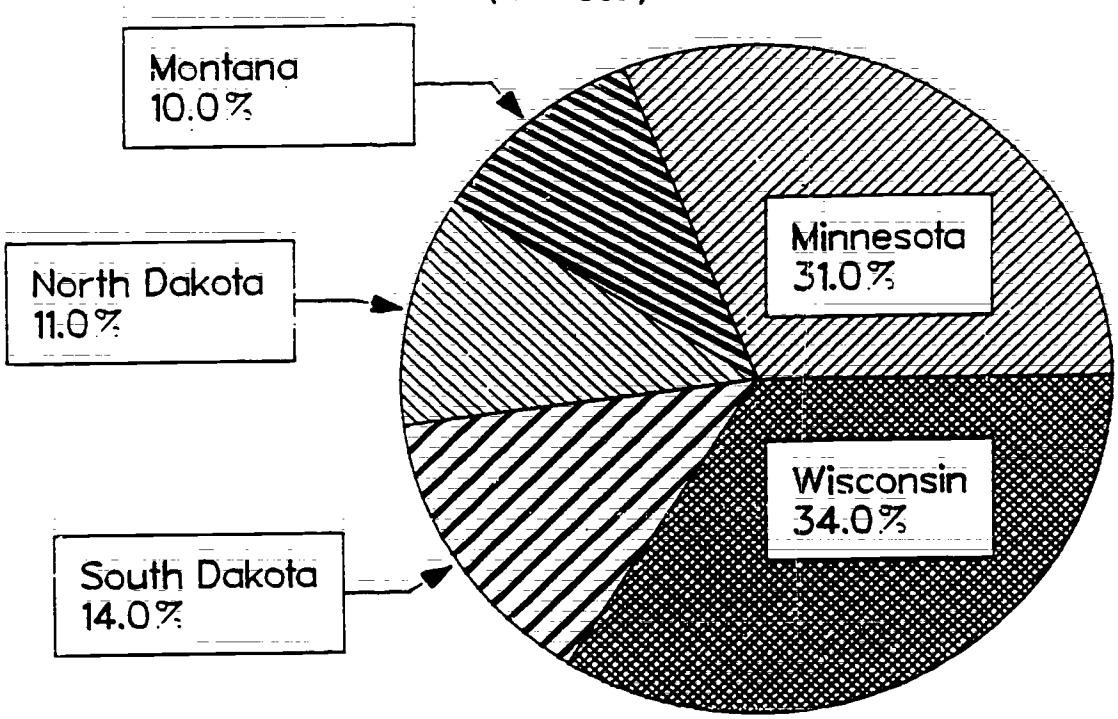
Almost all farmers who committed suicide between 1980 and 1985 were male (99 percent), reflecting the male composition of this occupation. Overall, 49 percent were married and 32 percent had never married. Table 2 below indicates that variation by marital status was observed across the five states. In

Figure 2
Suicide Rates Among Farmers by Year by State
1980-1985




SOURCE: Minnesota Center for Health Statistics

Figure 3
Proportion of Suicides Among Farmers
by State, 1980-1985
(N = 589)




SOURCE: Minnesota Center for Health Statistics

Table 2
Proportion of Suicides Among Farmers
by Marital Status and by State, 1980-1985
(N = 589)

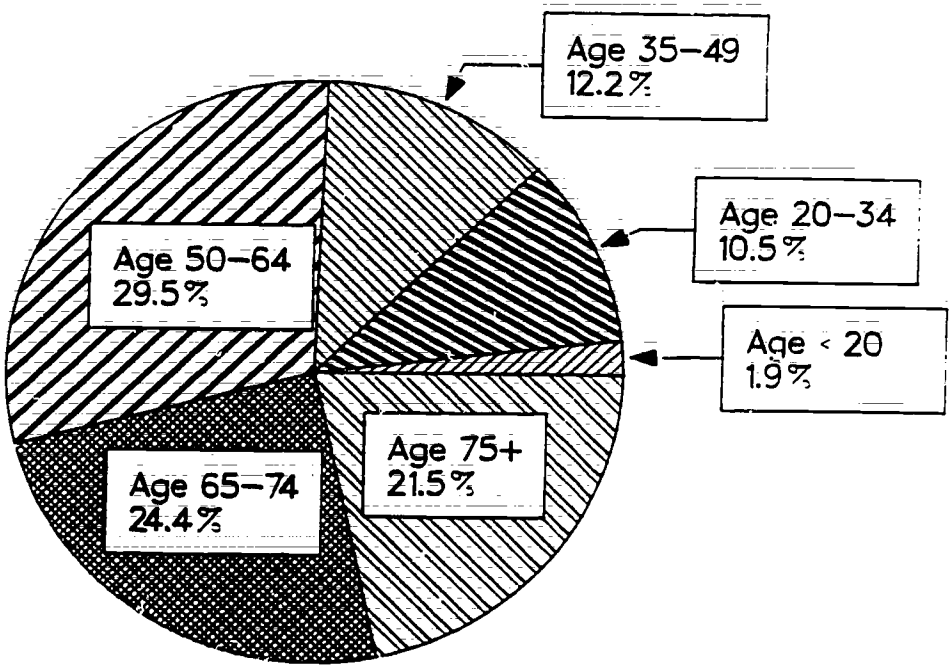
| Marital Status | State | | | | |
|---|---|---|---|---|---|
| | Minnesota | Montana | North Dakota | South Dakota | Wisconsin |
| Married | 56% | 59% | 45% | 25% | 50% |
| Never Married | 29% | 19% | 33% | 57% | 28% |
| Widowed | 8% | 5% | 17% | 12% | 17% |
| Divorced | 7% | 17% | 5% | 6% | 5% |

SOURCE: Minnesota Center for Health Statistics

particular, Montana experienced an excess of suicides among divorced farmers as opposed to the other four states and South Dakota experienced an excess of suicides among never married farmers when compared with the other four states.

Figure 4 depicts the overall suicide experience of farmers

Figure 4
Proportion of Suicides Among Farmers by Age,
All Study States, 1980-1985
(N = 589)



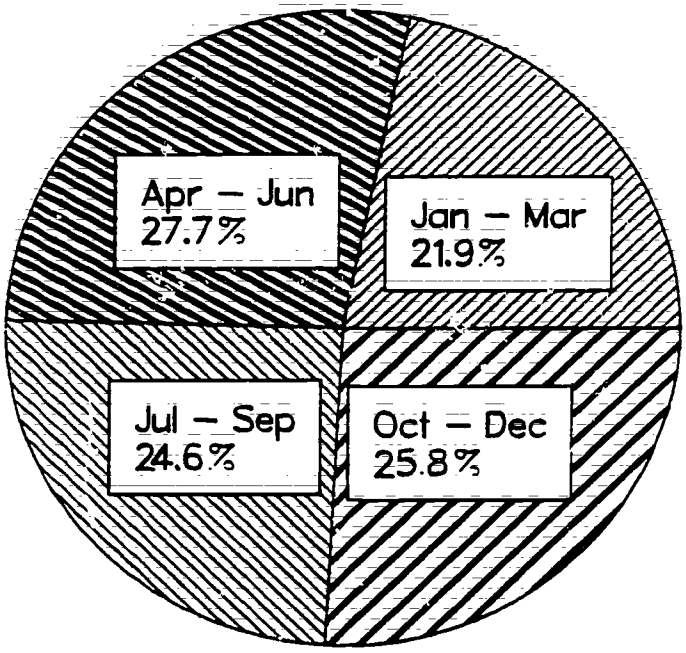

SOURCE: Minnesota Center for Health Statistics

by age cohort across the five state area during the surveillance period. Farmers above the age of 50 are clearly at greatest risk of suicide (median age at death was 63 years of age), although farming as an occupation is demographically older and decidedly more male than most occupations.

Almost all victims of suicide were white (99 percent) with American Indian farmers comprising one percent of the total. Only Montana and South Dakota reported suicides occurring among American Indian farmers or ranchers.

Figure 5 indicates that the proportion of suicides by calendar quarter was nearly equal. On a month-by-month basis the highest reported number of suicides occurred in May during the surveillance period and the lowest frequencies occurred in February and August. Within South Dakota, suicide levels which were proportionately double that of other states were typically reported during March, and Montana experienced similar phenomena during May of each year. On the other hand, both South Dakota and Montana reported unusually low levels of suicides during December of each surveillance year . . . levels typically one third that of the other three states.

Figure 5
Proportion of Suicides by Time of Year,
Farmers in All Study States, 1980-1985
(N = 589)

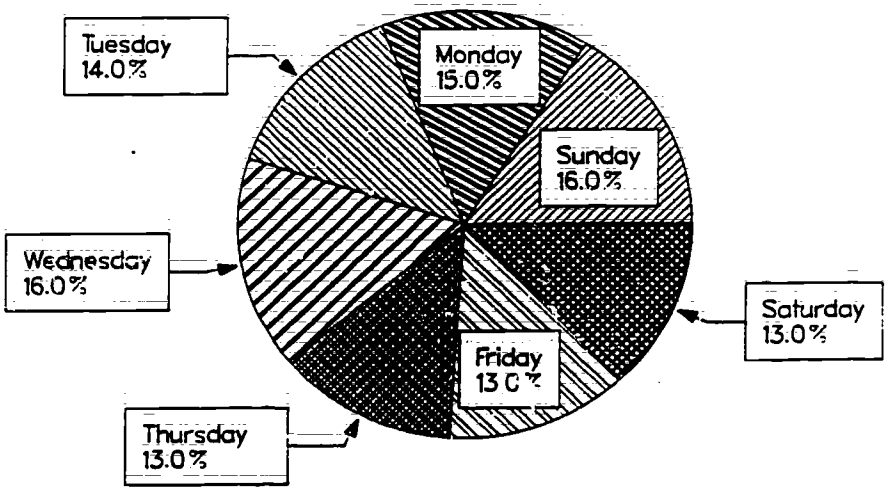



SOURCE: Minnesota Center for Health Statistics

The day of week on which a suicide event occurs may suggest when intervention effort might be focused. Figure 6 indicates that 45 percent of all suicide events reported among farmers across the five states occurred on Sunday through Tuesday of a typical week. Thirty-nine percent of all events occurred on Thursday, Friday and Saturday. In terms of a single day, thirty-two percent of all victims chose either Sunday or Wednesday as the day on which to commit suicide.

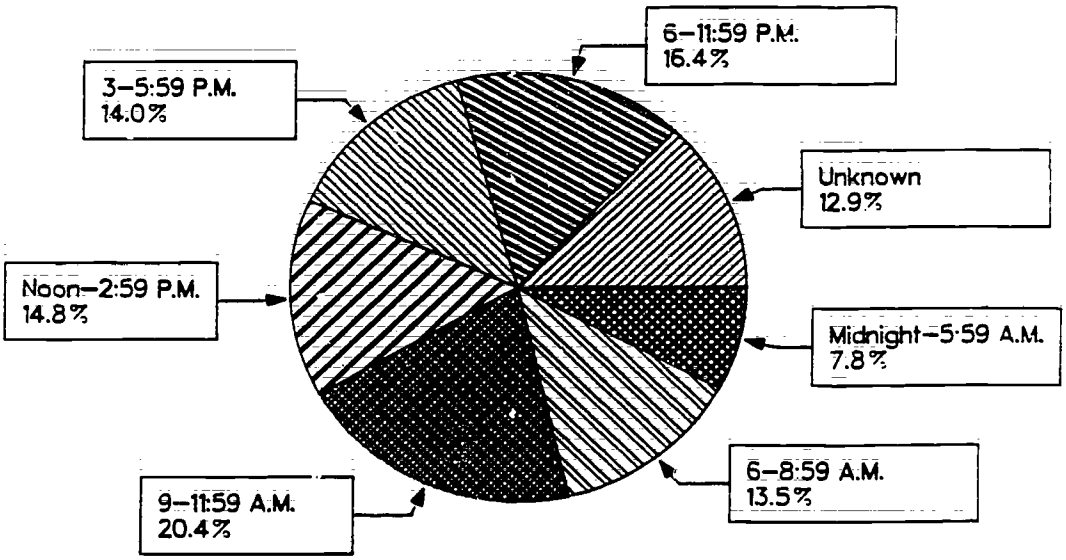
The time of day during which these suicides were reported to have occurred is depicted in Figure 7. Relatively few suicides occurred after midnight, however, twenty percent of all events occurred between the hours of 9:00 a.m. and 12:00 noon. Twenty nine percent occurred between 12:00 noon and 6:00 p.m. Approximately 16 percent of all suicides occurred between 6:00 p.m. and midnight (almost half of these events occurred between six and eight p.m.).

Figure 6
Day of Week on Which Suicide Occurred,
Farmers in All Study States, 1980-1985
(N = 589)




SOURCE: Minnesota Center for Health Statistics

Figure 7
Time of Day[1] During Which Suicides Among Farmers
Were Reported to Have Occurred,
All Study States, 1980-1985
(N = 589)

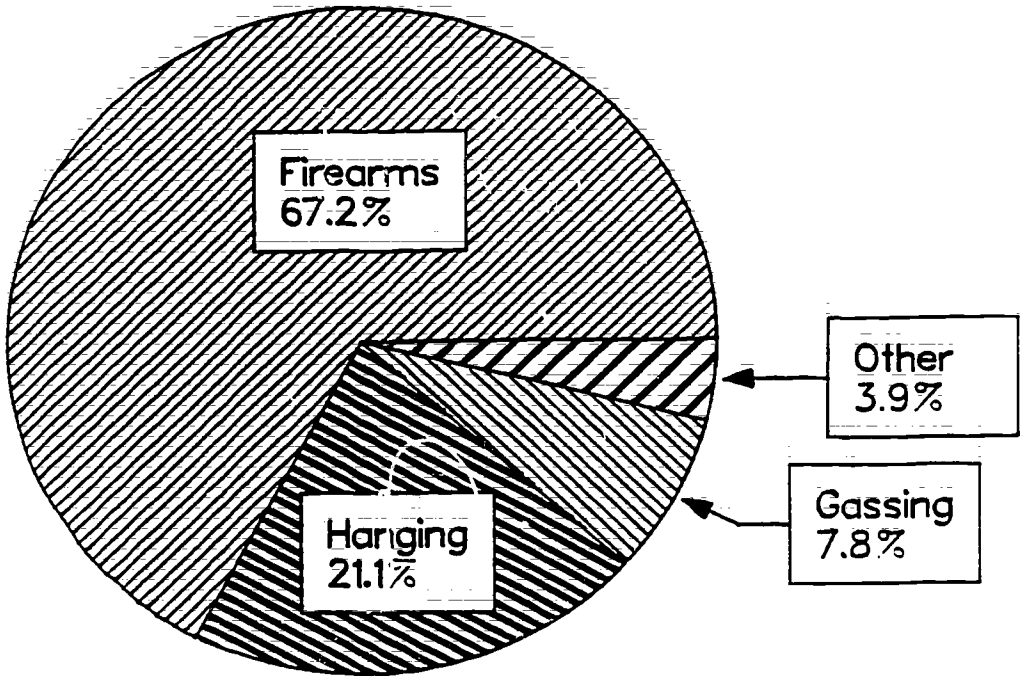



[1] The time at which the suicide occurred was unknown in 13 percent of all reported cases.

SOURCE: Minnesota Center for Health Statistics

The method associated with suicides among farmers across the five states is shown in Figure 8. Firearms accounted for most events; hanging was a distant second. The use of cutting instruments or drugs, or resort to drowning or jumping from heights accounted for almost four percent of the methods chosen by farmers who were suicide victims. There were no observed significant differences in method of suicide between the five states.

Figure 8
Method of Suicide Among Farmers,
All Study States, 1980-1985
(N = 589)




SOURCE: Minnesota Center for Health Statistics

## SUICIDE AMONG FARM WOMEN

Women, other than those who were farmers, farm operators or farm workers, were also considered at risk of farm-related suicide. These women had to possess a "connection" to a farming enterprise . . . a connection which was denoted occupationally as housewife, homemaker, etc. and whose marital status was depicted on the death certificate as: married, never married, widowed or divorced.

Figure 9 depicts change in the rate of suicide from 1980-1985 among women who had ever married and who resided on farms within the five state area. Both 1980 and 1982 displayed the

Figure 9
Suicide Rates Among Ever Married Women
Who Resided on Farms, All Study States[1],
1980-1985
(N = 43)


[1] No state-by-state analysis is reported due to the small observed frequencies within each state.

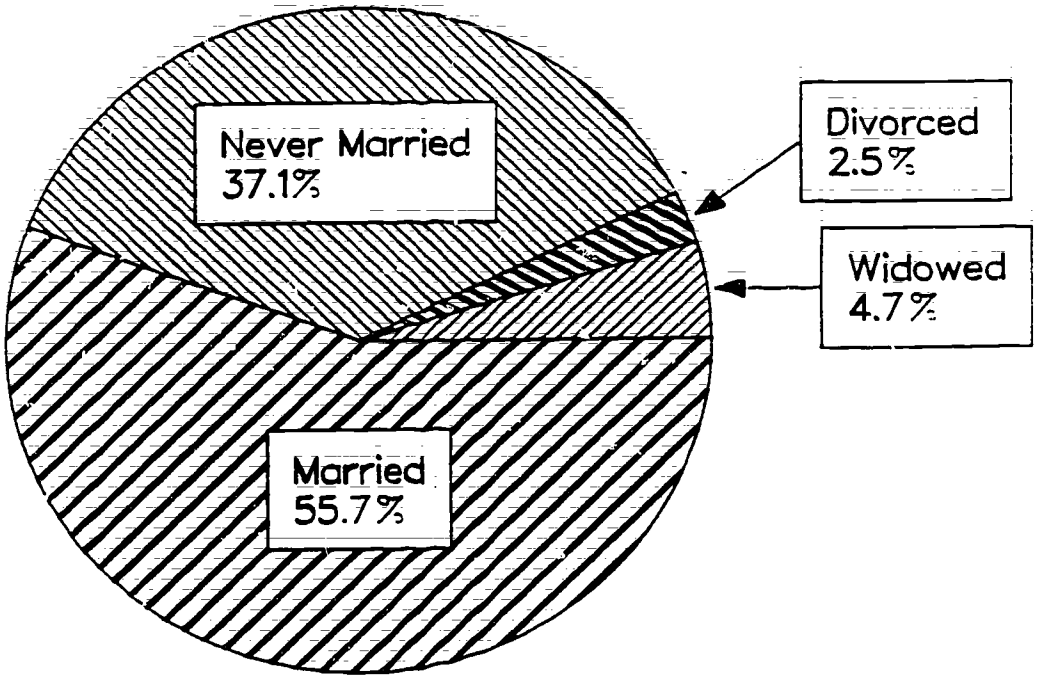
SOURCE: Minnesota Center for Health Statistics

highest death rates (5.7 and 5.8 events per 100,000 ever married women). At the end of the surveillance period the death rate resulting from suicide had dropped to 1.7 events per 100,000 women, a reduction of 341 percent.

Figure 10 indicates the proportions of this population by marital status who committed suicide during the surveillance period. Farm women who were married and never married accounted

for almost all suicides.

Figure 10
Proportion of Farm Women Who Committed Suicide, by Marital Status, All Study States, 1980-1985
(N = 43)




SOURCE: Minnesota Center for Health Statistics

Among farm women, only those who were "married" committed suicide in North Dakota whereas only "never married" women linked to a farm enterprise committed suicide in South Dakota. In Minnesota and Wisconsin the majority of suicides among farm women were committed by married women (58 and 89 percent respectively), and in Montana two married farm women and two never married farm women committed suicide during 1980-1985.

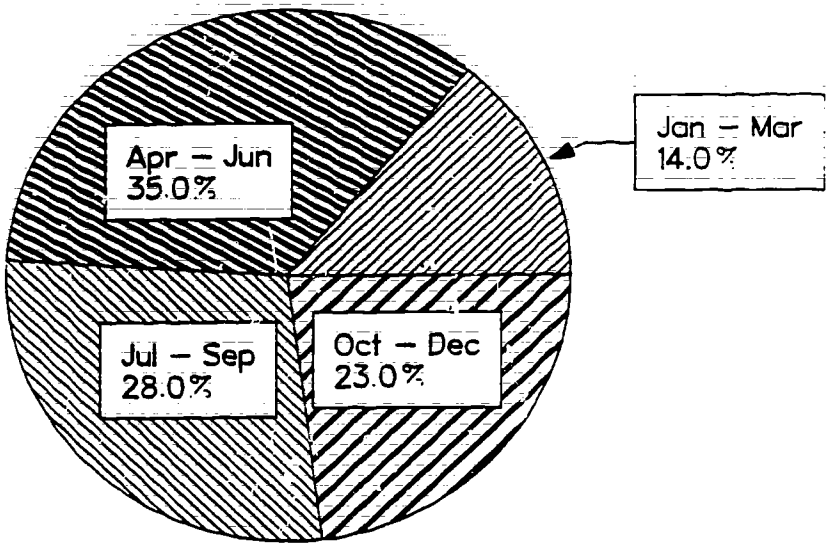
Minnesota and South Dakota each reported more than one-fourth of these suicides while Wisconsin had 21 percent of the total, North Dakota 16 percent, and Montana nine percent.

Ninety-three percent of farm women who committed suicide were white. American Indian women accounted for seven percent of these suicides, all of which occurred in South Dakota.

Figure 11 below indicates that almost two-thirds of these suicide events occurred during the interval from April through September. Sixty-six percent of these events occurred on a Thursday, Friday, and Saturday (See Figure 12). Wednesday held

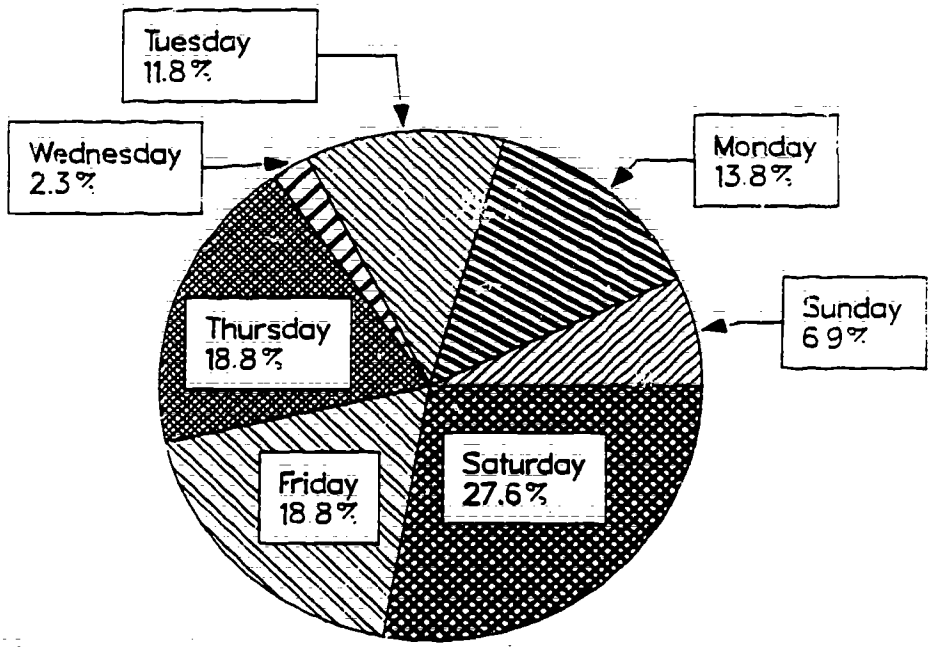
the fewest number of events--2 percent.

Figure 11
Proportion of Suicides by Time of Year, Farm Women in All Study States, 1980-1985
(N = 43)




SOURCE: Minnesota Center for Health Statistics

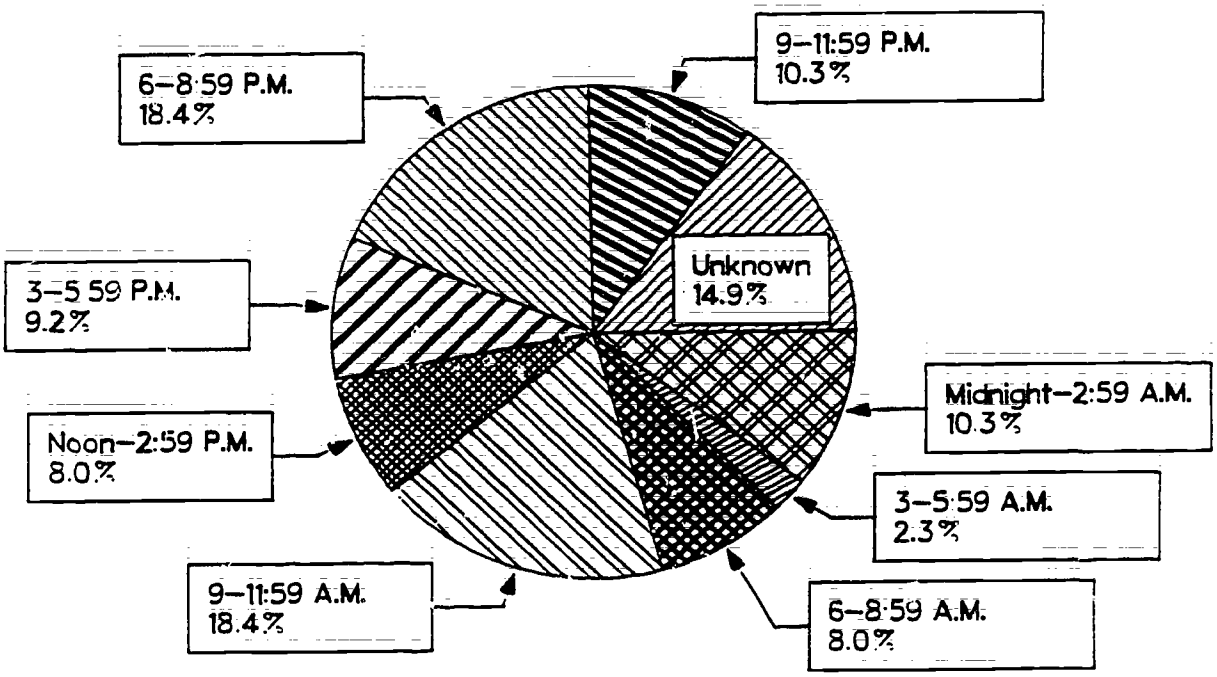
Figure 12
Day of Week on Which Suicide Occurred, Farm Women in All Study States, 1980-1985
(N = 43)




SOURCE: Minnesota Center for Health Statistics

Figure 13 suggests there were two time intervals of a typical day during which suicides among farm women were most likely to occur: the interval between 9:00 a.m. and 12 noon and the interval between 6:00 p.m. and 9:00 p.m. The time interval between 3:00 a.m. and 6:00 a.m. posted the fewest suicide events during the surveillance period.

Figure 13
Time of Day[1] During Which Suicide Occurred,
Farm Women, All Study States, 1980-1985
(N = 43)



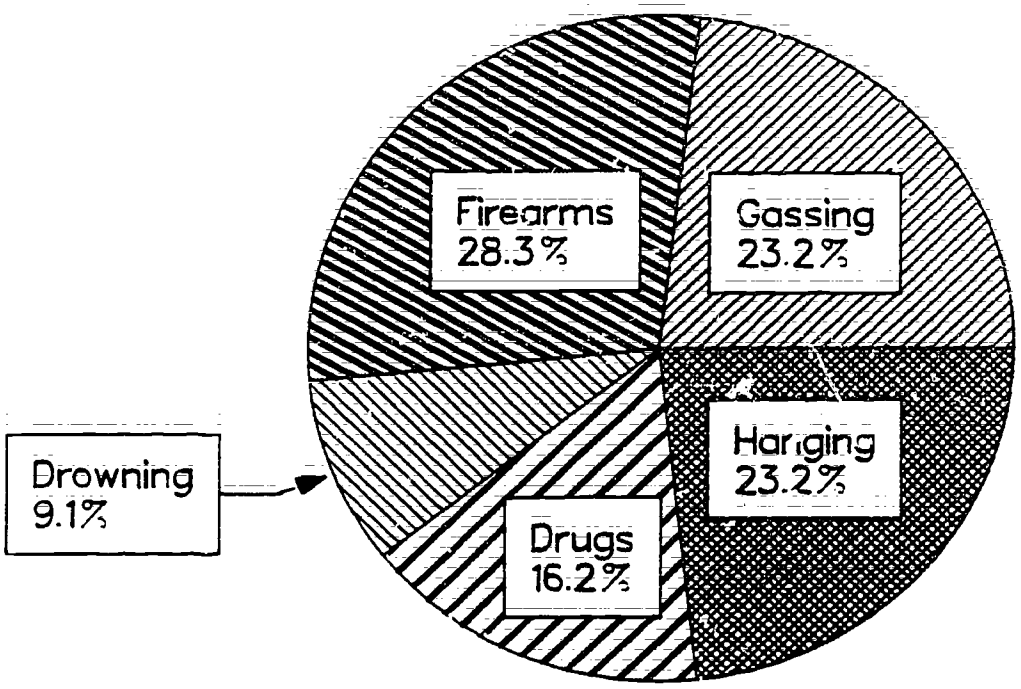

[1] The time of suicide event was unknown in 13 percent of all homemaker cases.

SOURCE: Minnesota Center for Health Statistics

The age cohort of farm women at greatest risk of suicide included those between 35 and 44 years of age. This age cohort was responsible for 37 percent of all suicide events. Those between the ages of 50 and 64 accounted for another 28 percent of all suicides. Young women between the ages of 20 and 34 years accounted for 21 percent of these suicides while those above the age of 64 accounted for 14 percent of all suicides. It is clear that women who reside on farms exhibit a different pattern of risk by age cohort than do male farmers.

The method associated with self-inflicted death is depicted in Figure 14. Firearms led all methods, accounting for 28 percent of all suicides. Exposure to gaseous substances and

Figure 14
Method of Suicide Among Farm Women,
All Study States, 1980-1985
(N = 43)



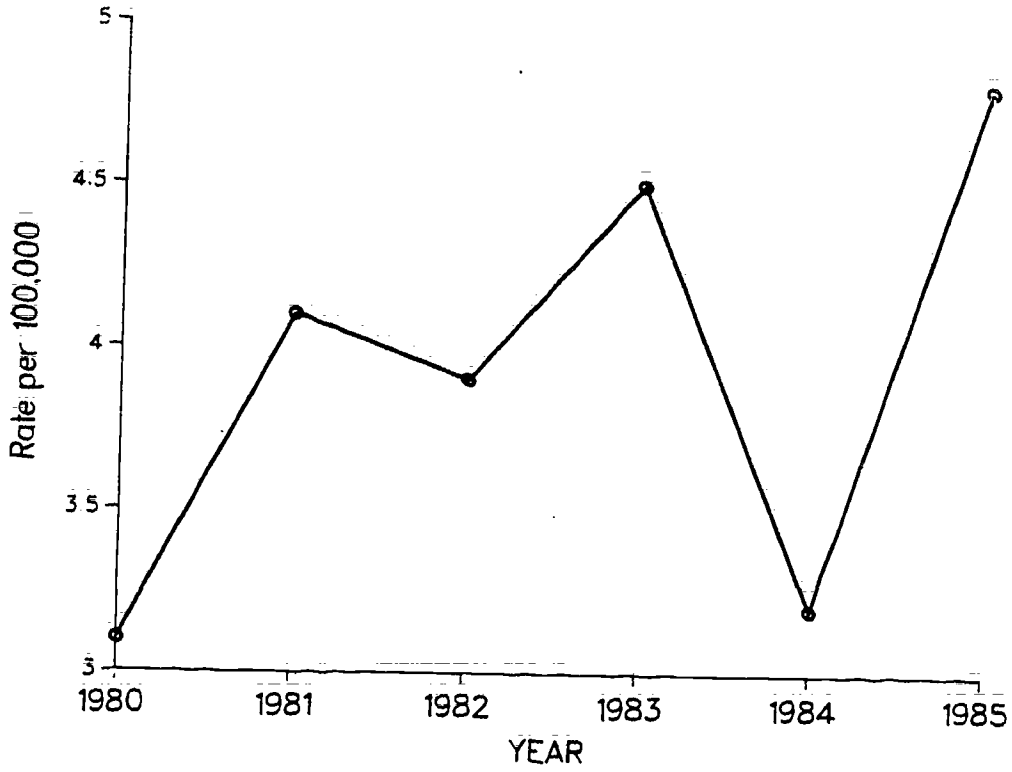

SOURCE: Minnesota Center for Health Statistics

hanging each accounted for 23 percent while drug overdosing resulted in death 16 percent of the time. Drowning claimed nine percent of all victims. The role of firearms in suicide deaths of women has expanded nationally since 1970. These results suggest that a similar trend is evidenced among ever married women who reside on farms.

## SUICIDE AMONG FARM WORKERS

Farm workers are, by definition, employees within a farm enterprise. As Figure 15 suggests, these workers were at a much lower risk of suicide than that of farmers. The temporal pattern across the surveillance period was also different with 1985 recording the highest suicide death rate of the time interval. As was observed among farmers, nearly all victims were male; only one female victim was identified. Unlike either farmers or homemakers, the proportion of American Indian farm workers who committed suicide was comparatively much larger. Twenty four percent of all farm workers who committed suicide were American

Figure 15
Suicide Rates Among Farm Workers by Year,
All Study States, 1980-1985
(N = 100)

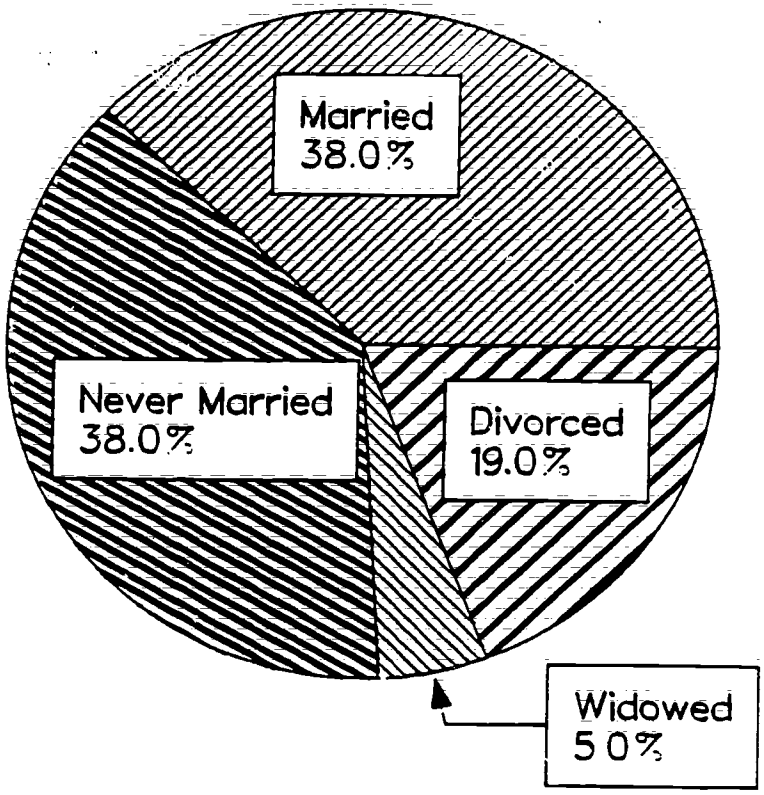



SOURCE: Minnesota Center for Health Statistics

Indian and 76 percent were white. While each of the five states evidenced white suicide victims who were farm workers, no American Indian farm workers in Minnesota or Wisconsin committed suicide.

Figure 16 depicts the marital status of farm worker suicide victims. Across the five states, "married" and "never married" suicide victims were of equal proportions. State-to-state variation was observed with the proportion of "never married"

Figure 16
Marital Status of Farm Workers Who Committed Suicide
All Study States, 1980-1985
(N = 100)

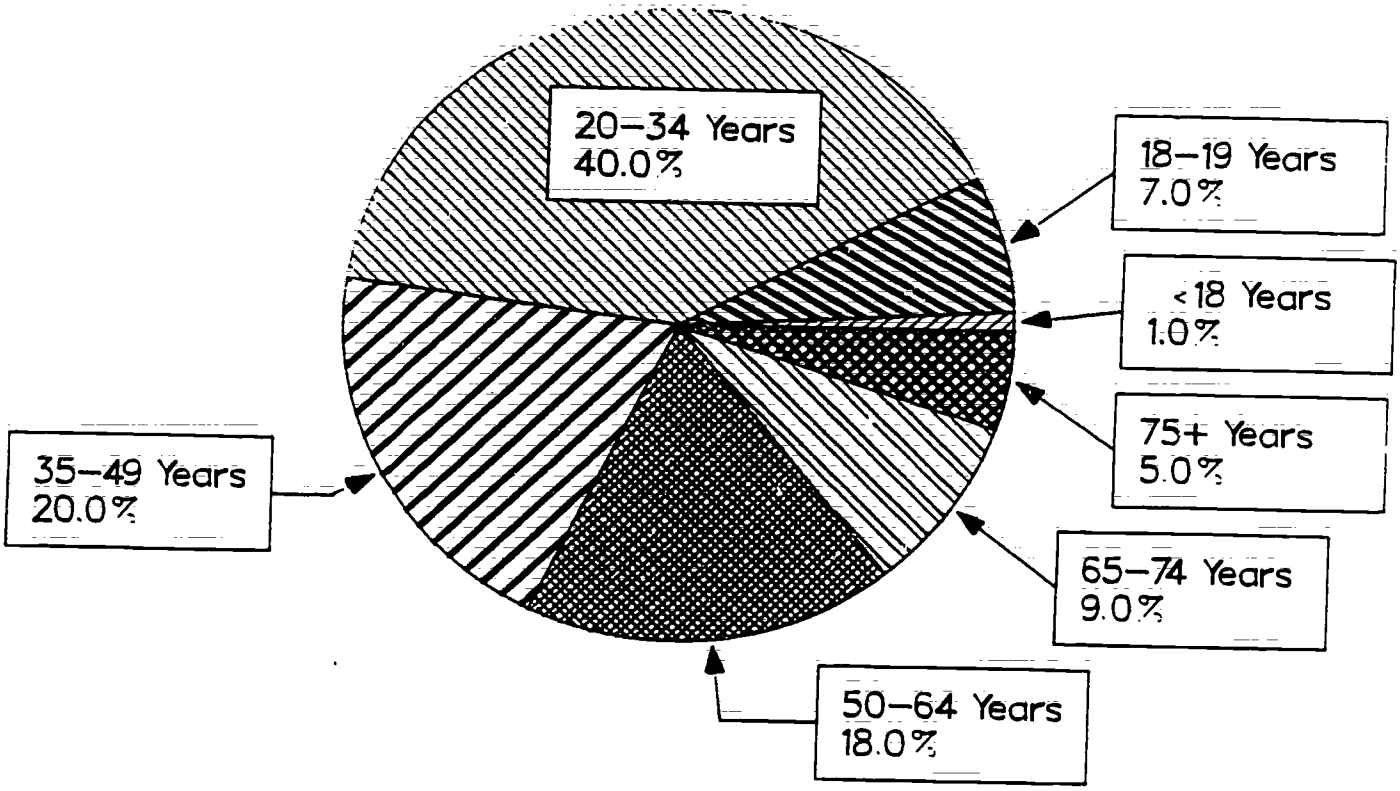



SOURCE: Minnesota Center for Health Statistics

victims in Minnesota, Montana and North Dakota exceeding that of "married" victims. The reverse was observed for South Dakota and Wisconsin where more "married" farm workers committed suicide than did "never married" farm workers.

The age composition of farm workers who committed suicide is depicted in Figure 17. The composition is markedly different from that of farmers. Across all states in the study almost half were aged 34 or under (only North Dakota and Wisconsin differed with 25 percent and 43 percent of all suicide events occurring to those under age 34). Proportionately few victims were aged 65 or over, or under the age of 20 years.

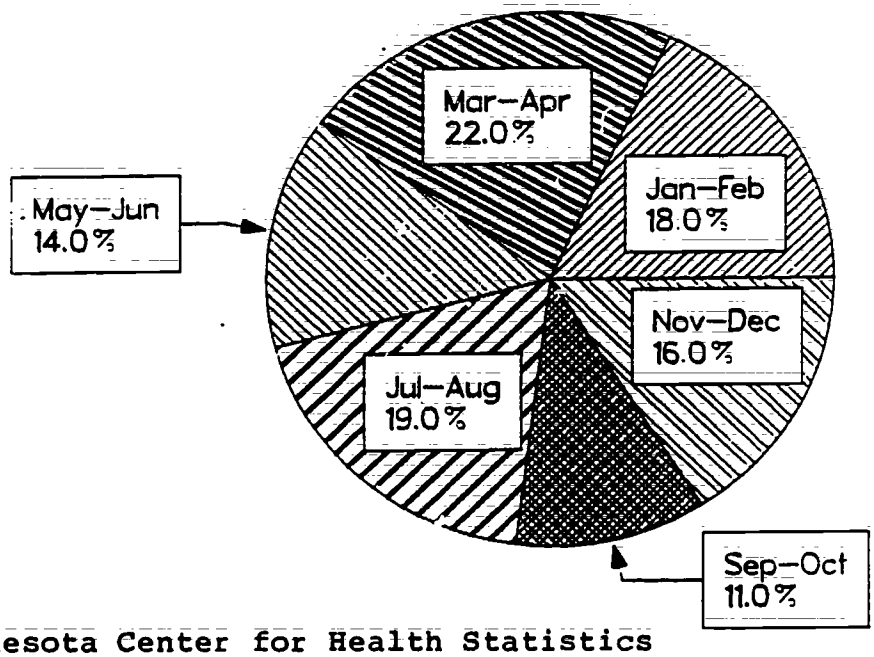
Figure 17
Age Composition of Farm Workers Who Committed Suicide,
All Study States, 1980-1985
(N = 100)




SOURCE: Minnesota Center for Health Statistics

Figure 18 depicts the temporal distribution of suicides among farm workers. The interval beginning in November and ending in April accounted for 56 percent of all events. March and April led all periods with 22 percent and September through October had the fewest events--11 percent. It should be noted that this pattern is different from farmers for whom low frequencies were reported for the months of February and August. Farm workers in Montana and North Dakota committed 32 and 50 percent of all relevant suicides in March and April while Minnesota's highest monthly total occurred in July (20 percent). South Dakota reported 36 percent of all farm worker events in the December through February interval and Wisconsin's high month was January with 29 percent of all events across the surveillance period.

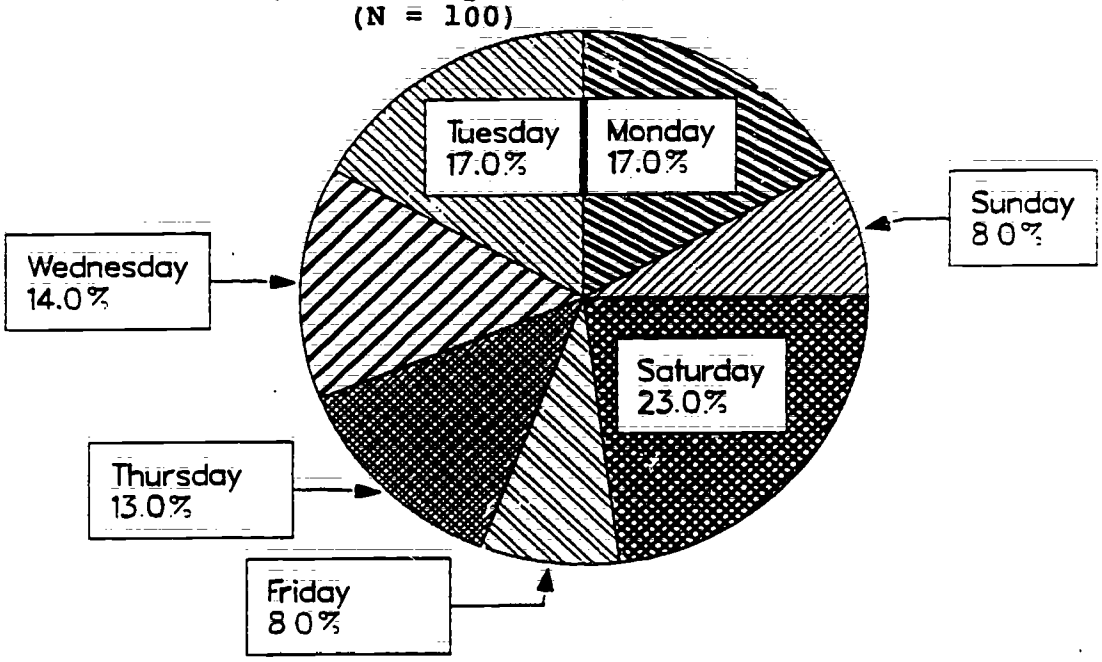
Figure 18
Proportion of Suicides by Time of Year,
Farm Workers, All Study States, 1980-1985
(N = 100)




SOURCE: Minnesota Center for Health Statistics

Figure 19 indicates the dispersion of these suicides during

Figure 19
Day of Week on Which Suicide Occurred,
Farm Workers, All Study States, 1980-1985
(N = 100)

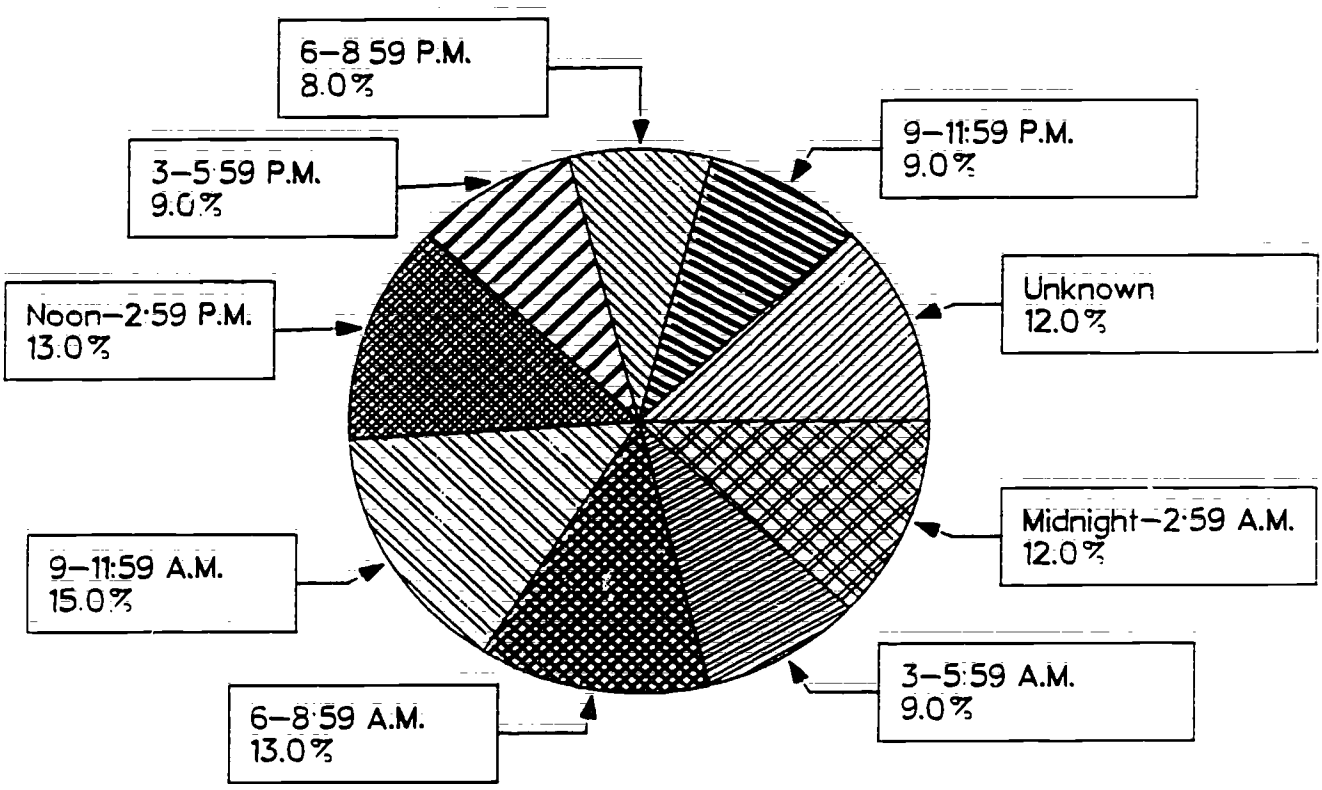



SOURCE: Minnesota Center for Health Statistics

a typical week of the surveillance period. Saturday held the highest proportion with 23 percent of all events, and Sunday and Friday accounted for the smallest proportion--8 percent on each day. Sixty one percent of these events occurred on Monday through Thursday. The highest proportions by day of week varied among the states. The greatest number of suicides occurred to farm workers in Minnesota on Saturday (40 percent), in Montana on Tuesday (26 percent), in North Dakota on Thursday (33 percent), in South Dakota on Saturday (24 percent), and in Wisconsin on Monday (24 percent).

The time of day during which these suicides were reported to have occurred is depicted in Figure 20. Unlike suicides

Figure 20
Time of Day[1] During Which Suicides
Among Farm Workers Were Reported to Have Occurred,
All Study States, 1980-1985
(N = 100)




[1] The time at which the suicide occurred was unknown in 12 percent of all reported cases.

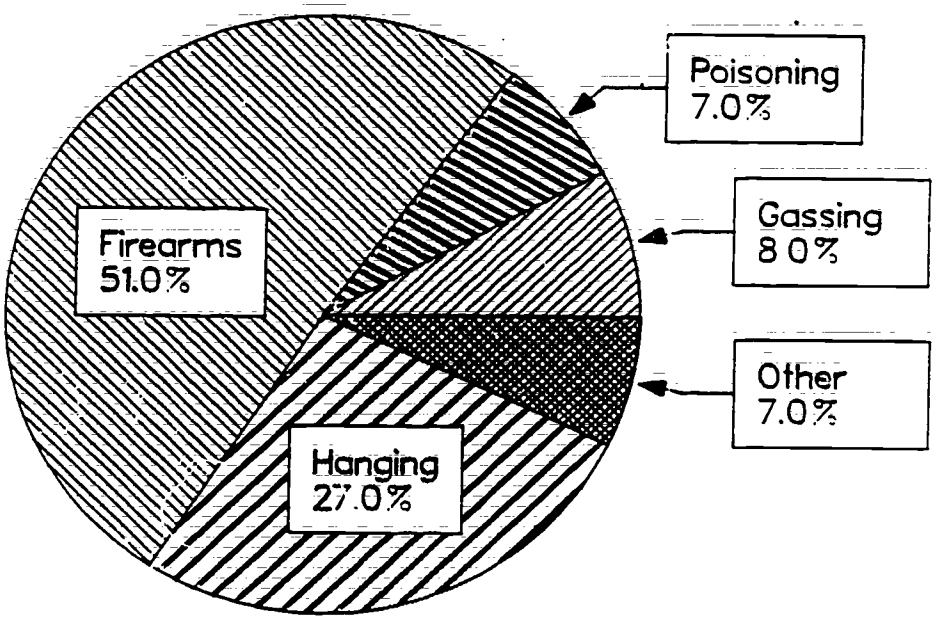
SOURCE: Minnesota Center for Health Statistics

occurring to farmers, a sizeable proportion of these events occurred between midnight and 6:00 a.m. (21 percent of the

total), while 30 percent occurred between the hours of 6:00 a.m. and 12:00 noon. The proportion of suicides which occurred between 6:00 p.m. and midnight was the smallest of any six-hour time frame--17 percent.

The method by which farm workers committed suicide is depicted in Figure 21. Deaths resulting from firearms accounted

Figure 21
Method of Suicide Among Farm Workers,
All Study States, 1980-1985
(N = 100)



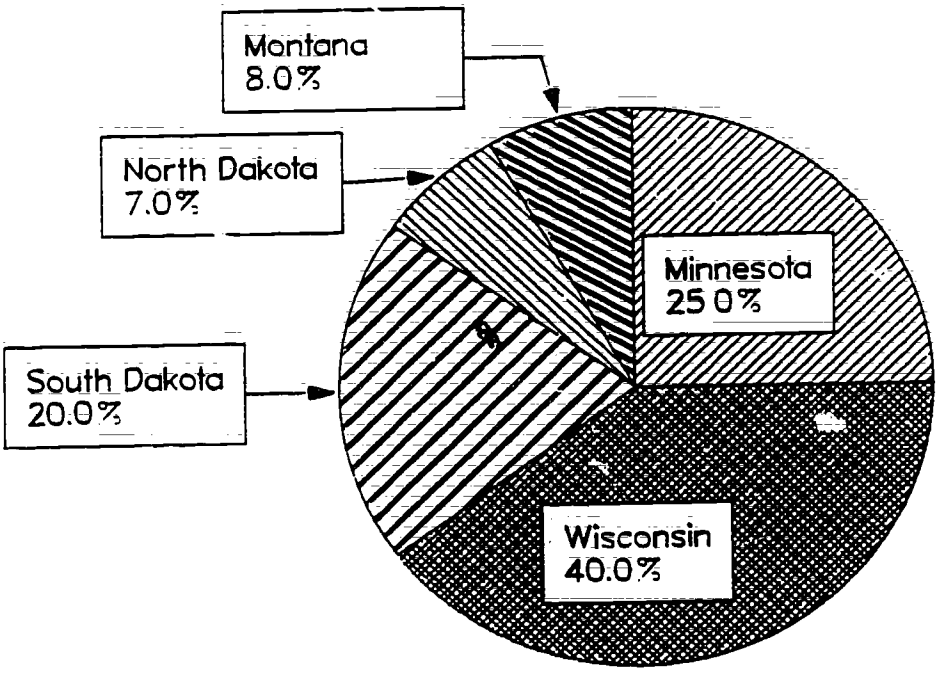

SOURCE: Minnesota Center for Health Statistics

for most suicides; hanging was a distant second at 27 percent, and other methods were used in 22 percent of these cases.

## CHILDREN AND ADOLESCENTS, AGED 20 AND YOUNGER

For the purposes of this analysis anyone aged 20 or younger who resided on a farm where parents farmed full-time, and who committed suicide during the interval from 1980 through 1985 was classified as a child or adolescent suicide victim. There were 60* suicides during the period under surveillance, distributed across the five states as shown in Figure 22. Because of extreme difficulty confronted when attempting to estimate the size of the

Figure 22
Distribution of Suicides Occurring
Among Adolescents, All Study States,
1980-1985
(N = 60)




SOURCE: Minnesota Center for Health Statistics

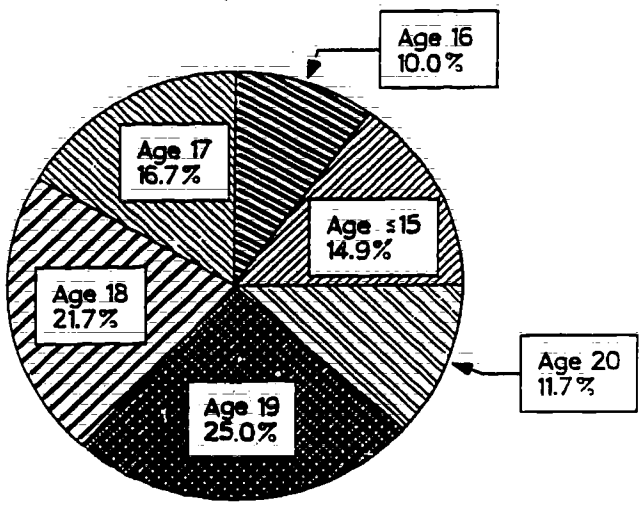
child or adolescent populations at risk (i.e., aged 20 or under and living on a "full-time" farm) from 1981-1985, it cannot be determined at this time if these state-to-state proportions contain greater or fewer events than expected.**

* Excluded in this analysis are two suicides reported to have involved adolescents who lived on "hobby farms." Forty-two of these adolescent victims were students, 18 were either employed as farm workers or farming themselves.

** The relevant state census data centers are currently developing and testing methodology which may yield the requisite estimates of the adolescent populations only.

The proportion of victims by age is depicted in Figure 23. It can be noted that most victims were aged sixteen or older with a median age of 18.4 years.

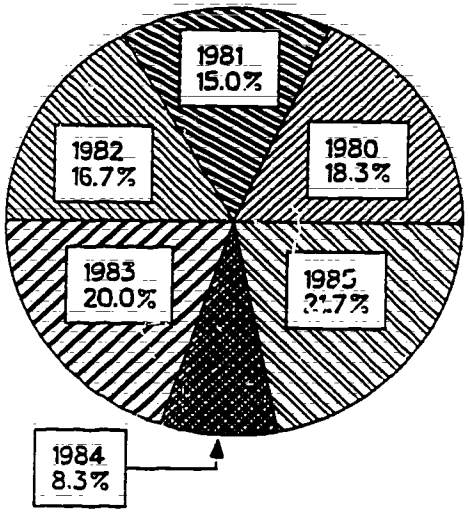
Figure 23
Age of Suicide Victims Who Resided on Farms,
Child or Adolescent,
All Study States, 1980-1985
(N = 60)




SOURCE: Minnesota Center for Health Statistics

The proportion of suicides which occurred year-to-year is depicted in Figure 24. Variation is observed and the pattern is

Figure 24
Proportion of Suicides Occurring to
Children and Adolescents Who Resided on Farms,
All Study States, 1980-1985
(N = 60)

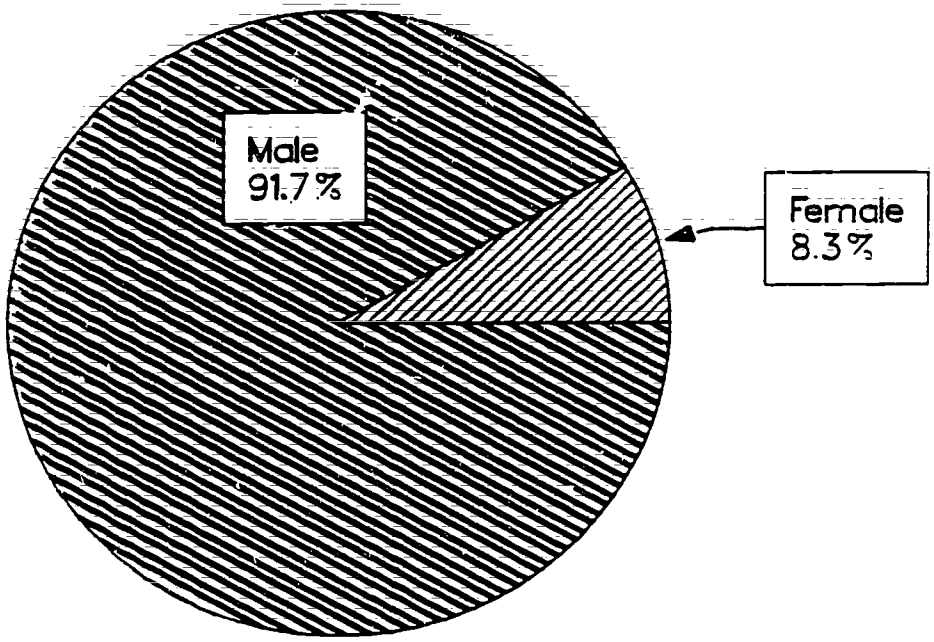



SOURCE: Minnesota Center for Health Statistics

different from that of other populations at risk such as farmers or farm women; however, little significance can be attached since the observed frequency of these events from year to year is low and the variation displays characteristic random behavior associated with suicide phenomena in general.

Nearly all child and adolescent victims were male (see Figure 25), confirming gender patterns observed in other epidemiologic studies of young suicide victims. Most victims

Figure 25
Gender of Child and Adolescent Suicide Victims
Residing on Farms,
All Study States, 1980-1985
(N = 60)

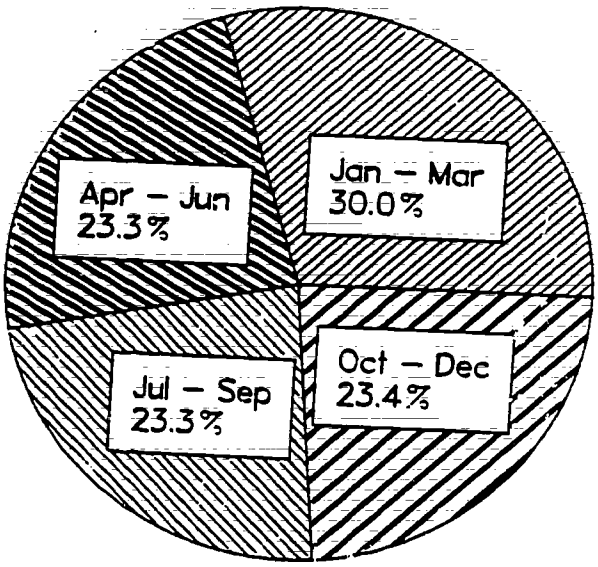



SOURCE: Minnesota Center for Health Statistics

were never married (75 percent), obviously a strong correlate with the observed age of these victims. Eight out of ten victims were white and two out of ten were of American Indian descent.

Figure 26 indicates the temporal distribution of these events by month across the six year surveillance period. Little variation was detected . . . a very modest excess proportion was observed for the first quarter of each year, reflecting events principally occurring in January of each surveillance year.

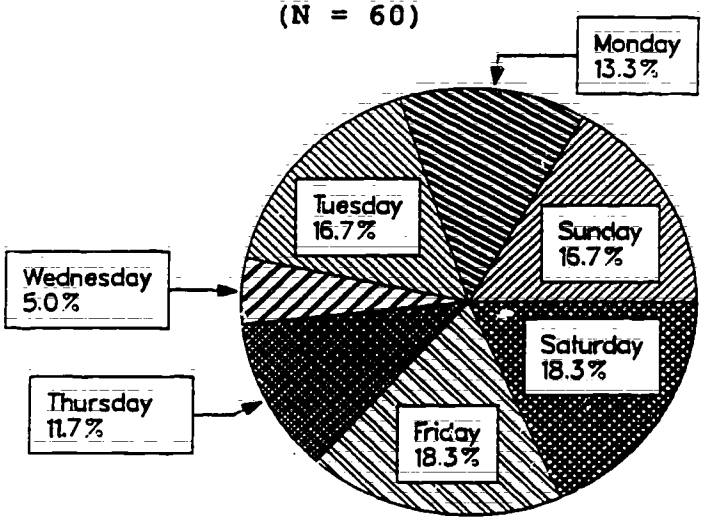
Figure 26
Month in Which Suicide Occurred,
Child and Adolescent Suicide Victims
Residing on Farms,
All Study States, 1980-1985
(N = 60)




SOURCE: Minnesota Center for Health Statistics

Some variation in suicide event by day of the week was observed for these young victims. Figure 27 indicates that

Figure 27
Day of Week on Which Suicide Occurred,
Child and Adolescent Suicide Victims
Residing on Farms,
All Study States, 1980-1985
(N = 60)

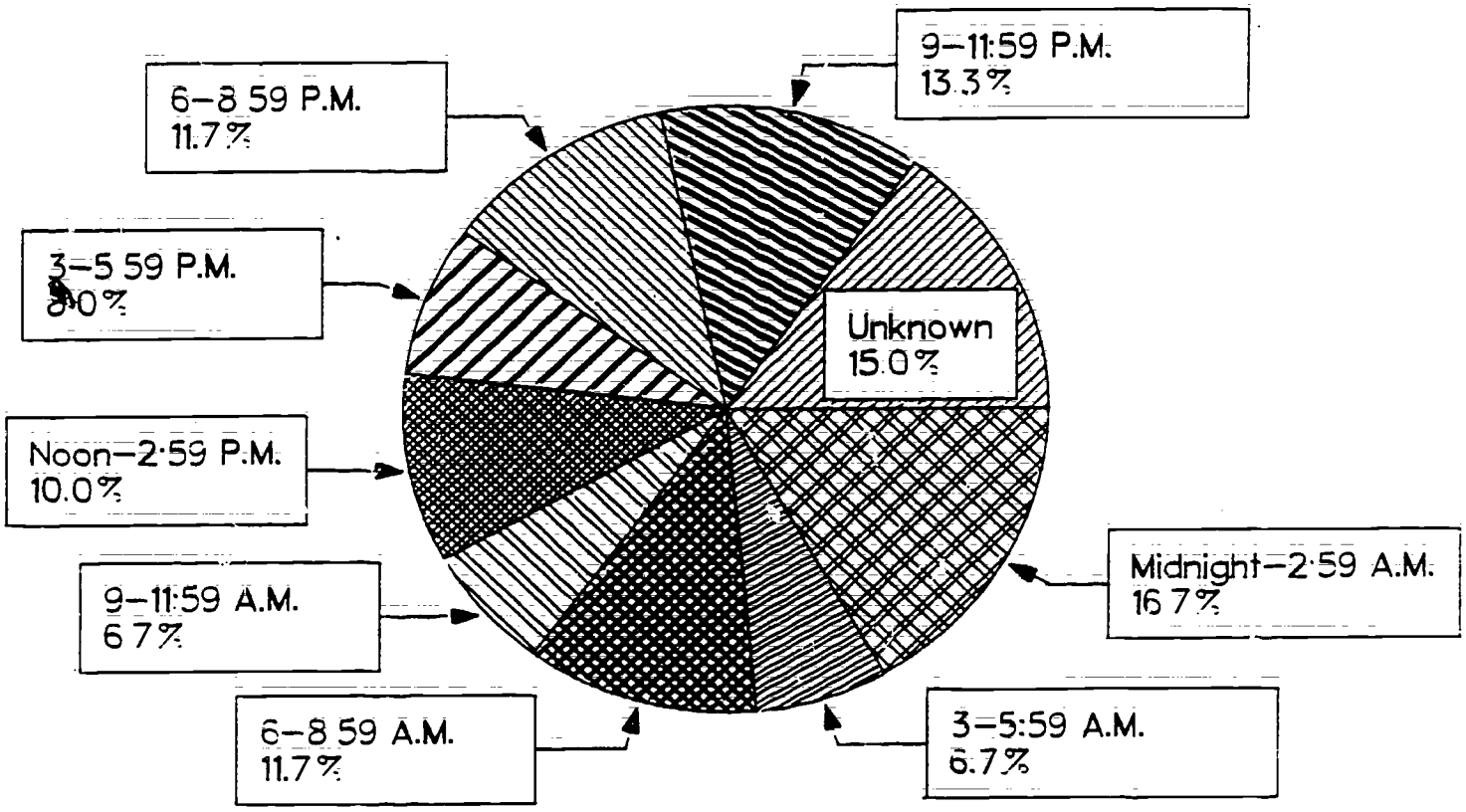



SOURCE: Minnesota Center for Health Statistics

Friday through Sunday accounts for 53 percent of all events reported. Mid-week clearly held the lowest portion of all events across the surveillance period (17 percent).

As a temporal dimension, time of day may offer a significant factor upon which to build part of an intervention strategy focused upon child or adolescent suicide victims. Twenty-three percent of these events occurred late at night, while fewer events occurred between 6:00 a.m. and noon. The evening hours between 9:00 and midnight held 13 percent of all events.

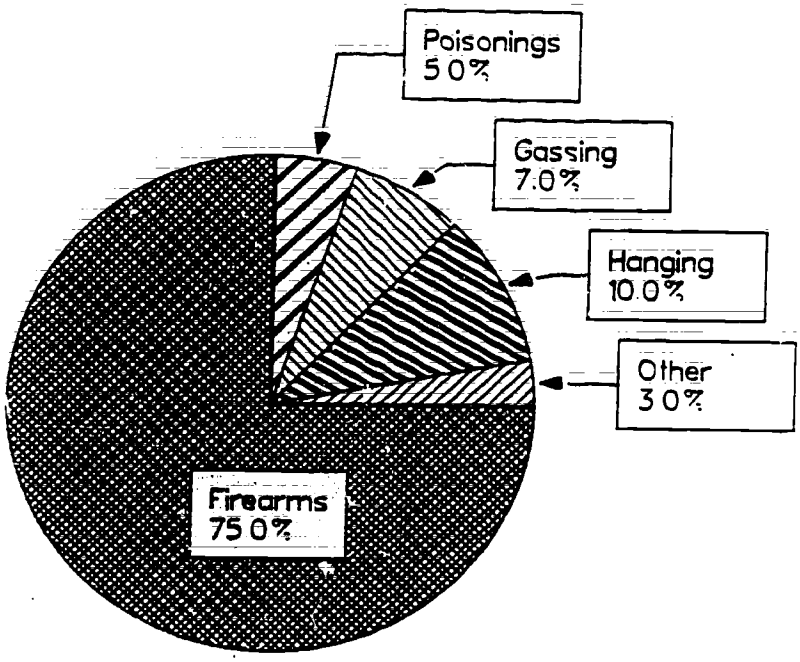
Figure 28
Time of Day During Which Suicide Occurred,
Children and Adolescents Residing on Farms,
All Study States, 1980-1985
(N = 60)




SOURCE: Minnesota Center for Health Statistics

The methods associated with these suicide deaths are depicted in Figure 29. Use of firearms caused three fourths of these deaths, proportionately more than for any other population cohort described in this study. All other methods accounted for 25 percent of the deaths occurring to children and adolescents across the surveillance period.

Figure 29
Method of Suicide Among Children and Adolescents Residing on Farms, All Study States, 1980-1985
(N = 60)




SOURCE: Minnesota Center for Health Statistics

## ACCURACY OF SUICIDE STATISTICS*

Information contained in this report is based on analysis of mortality data compiled from death certificates filed in each of the five states. The number of suicides specified in the records reflects the judgments and professional opinions of the physicians, coroners, or medical examiners who certify the medical/legal cause of death on the death certificate. Suicide statistics based on death certificates probably understated the true number of suicides in this study due to two reasons:

1) Inadequate information on which to make a determination of suicide as the cause of death.

   Without an explicit communication by the victim that the death was self-inflicted, the death might be erroneously ruled as homicide or an accident or will be ruled as undetermined. In other circumstances, there may be either conscious or unconscious attempts to obscure information necessary to make the determination of suicide, as in the case of a family deliberately withholding or unconsciously denying information to avoid stigmatizing themselves or the victim.

2) Certifier bias or error.

   The certifier may be influenced in recording an accurate certification of suicide because of pressures brought to bear by family or friends of the suicide victim. Also, error in judgment may occur on the part of the certifier because of inadequate criteria or standards for making a determination of death by suicide given a particular set of circumstances. That is, based on the same set of information, two certifiers may rule differently as to whether the death should or should not be determined to be suicide.

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* Credit is acknowledged to the Violence Epidemiology Branch, Center for Health Promotion and Education, Centers for Disease Control for the observations contained in this section of the report.

## RECOMMENDATIONS FOR FURTHER STUDY

Suicide is a very complex phenomena, therefore additional epidemiological research is often necessary in order to adequately explore its etiology. Accordingly, the following recommendations emanate from analysis completed to date:

(1) A case control (retrospective) study needs to be completed. Such a study would involve comparisons of resident farm populations with other occupational cohorts as well as other farm populations not engaging in suicide and would collect additional data necessary for exploration of this phenomena.

(2) A prospective surveillance component for data years 1986-1990 needs to be continued. This phase is essential in order to complete the universe of cases identified during the interval 1980-1990.

(3) An ecological analysis is also essential in order to address issues associated with both economic and rural policy change and its relation to mental stress and suicide among farm populations.

(4) Research endeavor needs to be continued which is focused on intervention within human populations. Most suicides, including those occurring on farms, are preventable and additional research may yield the programatic designs which agencies and households in rural areas can efficiently deploy.

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## APPENDIX A

Estimated Number of Farmers[1], Other Farm Operators, Farm Wives[2], Farm Laborers and Farms, Five North Central States, 1978-1985

| State & Category | Data Year 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 |
|---|---|---|---|---|---|---|---|---|
| Minnesota | | | | | | | | |
| Farmers | 71,090 | 70,280 | 69,490 | 68,610 | 67,740 | 66,870 | 66,050 | 65,250 |
| Other Operators | 27,585 | 27,350 | 27,110 | 26,880 | 26,640 | 26,400 | 26,170 | 25,930 |
| Farm Wives | 65,820 | 65,070 | 64,340 | 63,530 | 62,720 | 61,920 | 61,160 | 60,420 |
| Farm Laborers | 170,530 | 166,500 | 162,700 | 158,600 | 154,670 | 150,800 | 146,800 | 142,800 |
| Farms | 98,670 | 97,600 | 96,500 | 95,400 | 94,380 | 93,200 | 92,200 | 91,100 |
| Montana[3] | | | | | | | | |
| Farmers | 16,855 | 16,866 | 16,877 | 16,887 | 16,898 | 16,909 | 16,919 | 16,930 |
| Other Operators | 6,710 | 6,701 | 6,691 | 6,682 | 6,672 | 6,663 | 6,653 | 6,644 |
| Farm Wives | 15,606 | 15,617 | 15,627 | 15,636 | 15,646 | 15,656 | 15,666 | 15,676 |
| Farm Laborers | 40,190 | 38,800 | 37,500 | 36,150 | 34,750 | 33,420 | 32,000 | 30,650 |
| Farms | 23,565 | 23,566 | 23,567 | 23,569 | 23,570 | 23,571 | 23,572 | 23,574 |
| North Dakota | | | | | | | | |
| Farmers | 34,080 | 33,270 | 32,380 | 31,450 | 30,590 | 29,550 | 28,750 | 27,800 |
| Other Operators | 6,270 | 6,160 | 6,055 | 5,950 | 5,840 | 5,730 | 5,620 | 5.515 |
| Farm Wives | 31,550 | 30,810 | 29,980 | 29,120 | 28,320 | 27,360 | 26,620 | 25,740 |
| Farm Laborers | 55,430 | 51,600 | 47,700 | 43,980 | 39,980 | 36,010 | 32,080 | 28,300 |
| Farms | 40,360 | 39,750 | 38,400 | 37,450 | 36,430 | 35,475 | 34,490 | 33,500 |
| South Dakota | | | | | | | | |
| Farmers | 31,670 | 31,380 | 30,990 | 30,610 | 30,270 | 29,900 | 29,600 | 29,270 |
| Other Operators | 7,070 | 7,020 | 6,975 | 6,930 | 6,880 | 6,835 | 6,790 | 6,740 |
| Farm Wives | 29,320 | 29,060 | 28,690 | 28,340 | 28,030 | 27,690 | 27,410 | 27,100 |
| Farm Laborers | 48,250 | 46,600 | 45,000 | 43,300 | 41,650 | 40,005 | 38,400 | 36,900 |
| Farms | 38,740 | 38,670 | 37,990 | 37,550 | 37,150 | 36,750 | 36,300 | 36,000 |
| Wisconsin | | | | | | | | |
| Farmers | 59,220 | 58,950 | 58,600 | 58,270 | 57,940 | 57,610 | 57,310 | 56,990 |
| Other Operators | 27,280 | 26,530 | 25,770 | 25,015 | 24,260 | 23,505 | 22,750 | 21,990 |
| Farm Wives | 54,830 | 54,580 | 54,260 | 53,950 | 53,650 | 53,340 | 53,070 | 52,770 |
| Farm Laborers | 165,360 | 164,330 | 163,430 | 162,330 | 161,500 | 160,500 | 159,550 | 158,700 |
| Farms | 86,500 | 85,500 | 84,200 | 83,400 | 82,199 | 81,150 | 80,050 | 79,100 |

[1] Only farmers whose principal occupation was listed in the 1978 and 1982 Census of Agriculture as a farmer are estimted here. Other operators typically include individuals who are farming part time as well as some dual occupation enterprises. The net reduction in number of farmers by state was: Montana (1978) 28.5%, (1982) 28.3%; Minnesota (1978) 28.0%, (1982) 28.4%; North Dakota (1978) 15.5%, (1982) 16.0%; South Dakota (1978) 18.3%, (1982) 18.5%; and Wisconsin (1978) 31.5%, (1982) 29.5%.

[2] The number of farm wives was estimated for the six-year surveillance period using the ratio of 108 males to 100 females (Farm Population of the United States, 1985, U.S.D.A.).

[3] Estimates are not rounded as the change in frequencies was so small across the surveillance period.

APPENDIX B

DETAILED
SUICIDE STATISTICS
OF FARMERS,
FARM LABORERS,
FARM WOMEN, AND
CHILDREN AND ADOLESCENTS
1980-1985

Table 1
Number of Suicides and Death Rates
Among Farmers Aged 18 and Over by Year,
All Study States[1], 1980-1985

| Surveillance Year | Estimated Size of Population[2] | Number of Suicides | Suicide Death Rate Per 100,000 Population |
|---|---|---|---|
| 1980 | 208,337 | 92 | 44.2 |
| 1981 | 205,827 | 86 | 41.8 |
| 1982 | 203,438 | 118 | 58.0 |
| 1983 | 200,839 | 110 | 54.8 |
| 1984 | 198,629 | 101 | 50.8 |
| 1985 | 196,240 | 82 | 41.7 |

[1] The five study states were Minnesota, Montana, North Dakota, South Dakota, and Wisconsin (also in Tables 2-13).

[2] Only individuals whose principal occupation was farming are included in these estimates (1983 is an actual enumeration). Please refer to Appendix A for additional detail.

SOURCE: Minnesota Center for Health Statistics

Table 2
Number of Suicides and Death Rates Among Farm Laborers
by Year, All Study States, 1980-1985

| Surveillance Year | Estimated Size of Population | Number of Suicides | Suicide Death Rate Per 100,000 Population |
|---|---|---|---|
| 1980 | 457,330 | 14 | 3.1 |
| 1981 | 444,360 | 18 | 4.1 |
| 1982 | 432,550 | 17 | 3.9 |
| 1983 | 420,735 | 19 | 4.5 |
| 1984 | 408,830 | 13 | 3.2 |
| 1985 | 397,350 | 19 | 4.8 |

SOURCE: Minnesota Center for Health Statistics

Table 3
Number of Suicides and Death Rates Among Farm Women Who Had Ever Married,[1] All Study States, 1980-1985

| Surveillance Year | Estimated Size of Population | Number of Suicides | Suicide Death Rate[2] Per 100,000 Population |
|---|---|---|---|
| 1980 | 192,897 | 11 | 5.7 |
| 1981 | 190,576 | 5 | 2.6 |
| 1982 | 188,366 | 11 | 5.8 |
| 1983 | 185,966 | 6 | 3.2 |
| 1984 | 183,926 | 7 | 3.8 |
| 1985 | 181,706 | 3 | 1.7 |

[1] Women who had never married, yet resided on farms are excluded from this analyses since the size of the population at risk could not be estimated.

[2] Because this death rate is calculated with observed frequencies which are very small, caution must be exercised in their interpretation.

SOURCE: Minnesota Center for Health Statistics

Table 4
Number of Suicides Among Farmers
Aged 18 and Over by Sex and by Year,
All Study States, 1980-1985

| Surveillance Year | Number of Suicides | |
|---|---|---|
| | Female | Male |
| 1980 | 2 | 90 |
| 1981 | 0 | 86 |
| 1982 | 1 | 117 |
| 1983 | 0 | 110 |
| 1984 | 0 | 101 |
| 1985 | 1 | 81 |
| Total | 4 | 585 |

SOURCE: Minnesota Center for Health Statistics

Table 5
Number and Proportion of Suicides
Reported Among Farmers
by Age Cohort and by State,
All Study States, 1980-1985

| Age Cohort | Minnesota | | Montana | | North Dakota | | South Dakota | | Wisconsin | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| <20 | 3 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 5 | 2 | 10 | 2 |
| 20-34 | 13 | 7 | 9 | 15 | 6 | 9 | 12 | 14 | 22 | 11 | 62 | 11 |
| 35-49 | 26 | 15 | 7 | 12 | 7 | 11 | 13 | 16 | 19 | 9 | 72 | 12 |
| 50-64 | 54 | 30 | 22 | 37 | 19 | 29 | 25 | 30 | 54 | 27 | 174 | 29 |
| 65-74 | 47 | 26 | 10 | 17 | 21 | 32 | 18 | 21 | 48 | 24 | 144 | 24 |
| 75+ | 36 | 20 | 11 | 19 | 12 | 18 | 15 | 18 | 53 | 26 | 127 | 22 |
| Total | 179 | - | 59 | - | 66 | - | 84 | - | 201 | - | 589 | - |

SOURCE: Minnesota Center for Health Statistics

Table 6
Proportion of Suicides Reported Among Farmers by Month,
All Study States, 1980-1985

| Month | Minnesota | Montana | North Dakota | South Dakota | Wisconsin |
|---|---|---|---|---|---|
| January | 9 | 6 | 5 | 6 | 16 |
| February | 11 | 5 | 5 | 4 | 13 |
| March | 9 | 4 | 8 | 13 | 15 |
| April | 19 | 6 | 8 | 5 | 18 |
| May | 12 | 9 | 4 | 10 | 27 |
| June | 16 | 5 | 2 | 4 | 18 |
| July | 18 | 5 | 6 | 10 | 16 |
| August | 16 | 2 | 4 | 4 | 13 |
| September | 21 | 5 | 8 | 7 | 10 |
| October | 12 | 6 | 6 | 10 | 18 |
| November | 15 | 4 | 3 | 8 | 16 |
| December | 21 | 2 | 7 | 3 | 21 |
| Total | 179 | 59 | 66 | 84 | 201 |

SOURCE: Minnesota Center for Health Statistics

Table 7
Method of Suicide Among Farmers by Age,
All Study States, 1980-1985

| Method | Age Cohort | | | | | | |
|---|---|---|---|---|---|---|---|
| | <20 Years | 20-34 Years | 35-49 Years | 50-64 Years | 65-74 Years | 75+ Years | Total |
| Firearms | 6 | 44 | 53 | 117 | 100 | 76 | 396 |
| Hanging | 2 | 11 | 10 | 35 | 31 | 35 | 124 |
| Gas | 1 | 7 | 6 | 13 | 10 | 9 | 46 |
| Other | 1 | 0 | 3 | 9 | 3 | 7 | 23 |
| Total | 10 | 62 | 72 | 174 | 144 | 127 | 589 |

SOURCE: Minnesota Center for Health Statistics

Table 8
Number and Proportion[1] of Suicides Among Farm Women
Aged 18 and Older by Marital Status,
All Study States, 1980-1985

| Marital Status | Minnesota | | Montana | | North Dakota | | South Dakota | | Wisconsin | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| Married | 7 | 58.3 | 2 | 50.0 | 7 | 100 | 0 | 0.0 | 8 | 88.9 | 24 | 56 |
| Never Married | 3 | 25.0 | 2 | 50.0 | 0 | 0.0 | 11 | 0.0 | 0 | 0.0 | 16 | 37 |
| Widowed | 1 | 8.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 11.1 | 2 | 5 |
| Divorced | 1 | 8.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 2 |
| Total | 12 | - | 4 | - | 7 | - | 11 | - | 9 | - | 43 | 100 |
| Proportional Total by State | - | 27.9 | - | 9.3 | - | 16.3 | - | 25.6 | - | 20.9 | | |

[1] Proportions may not total 100% due to rounding.

SOURCE: Minnesota Center for Health Statistics

Table 9
Method of Suicide Among Farm Women
By Age, All Study States, 1980-1985

| | Age Cohort | | | | |
|---|---|---|---|---|---|
| Method | 20-34 Years | 35-49 Years | 50-64 Years | 65+ Years | Total |
| Drugs | 3 | 3 | 1 | 0 | 7 |
| Gas | 0 | 3 | 5 | 2 | 10 |
| Hanging | 0 | 5 | 2 | 3 | 10 |
| Drowning | 0 | 2 | 1 | 1 | 4 |
| Firearms | 6 | 3 | 3 | 0 | 12 |
| Total | 9 | 16 | 12 | 6 | 43 |

SOURCE: Minnesota Center for Health Statistics

Table 10
Marital Status of Farm Workers
Who Committed Suicide, All Study
States, 1980-1985

| Marital Status | State | | | | | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Minnesota | | Montana | | North Dakota | | South Dakota | | Wisconsin | | | |
| | # | % | # | % | # | % | # | % | # | % | # | % |
| Married | 4 | 27% | 6 | 32% | 2 | 17% | 15 | 45% | 11 | 52% | 38 | 38 |
| Never Married | 8 | 53% | 8 | 42% | 7 | 58% | 8 | 24% | 7 | 33% | 38 | 38 |
| Widowed | 1 | 7% | 1 | 5% | 0 | 0% | 2 | 6% | 1 | 5% | 5 | 5 |
| Divorced | 2 | 13% | 4 | 21% | 3 | 25% | 8 | 24% | 2 | 10% | 19 | 19 |
| Total | 15 | - | 19 | - | 12 | - | 33 | - | 21 | - | 100 | - |

SOURCE: Minnesota Center for Health Statistics

Table 11
Proporation of Suicide Victims By Age Cohort,
Farm Workers, All Study States, 1980-1985

| Age | State | | | | | Total |
|---|---|---|---|---|---|---|
| | Minnesota | Montana | North Dakota | South Dakota | Wisconsin | |
| 18 | 0 | 5% | 0 | 0 | 0 | 1% |
| 18-19 | 13.3% | 10% | 0 | 3 | 4.8% | 6% |
| 20-34 | 46.7% | 25% | 25% | 54.6% | 38% | 40% |
| 35-49 | 6.7% | 15% | 41.7% | 24.2% | 19% | 21% |
| 50-64 | 20% | 20% | 25% | 15.2% | 14.3% | 18% |
| 65-74 | 13.3% | 10% | 8.3% | 0 | 19.1% | 9% |
| 75+ | 0 | 15% | 0 | 3% | 4.8% | 5% |
| TOTAL | 100% | 100% | 100% | 100% | 100% | |

SOURCE: Minnesota Center for Health Statistics

Table 12
Distribution of Suicide Victims
by Age, Children and Adolescents,
All Study States, 1980-1985

(Note: This table contains very small frequencies, therefore extreme caution must be deployed when deriving inferences.)

| Age | Minnesota | Montana | North Dakota | South Dakota | Wisconsin | Total |
|---|---|---|---|---|---|---|
| 11 | 0 | 1 | 0 | 0 | 0 | 1 |
| 15 | 4 | 1 | 0 | 2 | 1 | 8 |
| 16 | 1 | 0 | 0 | 2 | 3 | 6 |
| 17 | 2 | 1 | 0 | 4 | 3 | 10 |
| 18 | 3 | 0 | 1 | 2 | 7 | 13 |
| 19 | 3 | 2 | 2 | 1 | 7 | 15 |
| 20 | 2 | 0 | 1 | 1 | 3 | 7 |
| Total | 15 | 5 | 4 | 12 | 24 | 60 |

SOURCE: Minnesota Center for Health Statistics

# APPENDIX C

## FACSIMILES OF DEATH CERTIFICATES FOR THE STATES OF MINNESOTA, MONTANA, NORTH DAKOTA, SOUTH DAKOTA, AND WISCONSIN

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MINNESOTA DEPARTMENT OF HEALTH
Section of Vital Statistics

# CERTIFICATE OF DEATH

LOCAL FILE NUMBER

STATE FILE NUMBER

1 DECEASED – NAME (First, Middle, Last)

2 SEX

3 DATE OF DEATH (Mo, Day, Year)

4a. AGE (In Years Last Birthday)

4b Under One Year: Months, Days

4c Under One Day: Hours, Minutes

5 DATE OF BIRTH (Mo, Day, Year)

6 RACE (Specify)

7a COUNTY OF DEATH

7b LOCATION OF DEATH (City or Township)

7c HOSPITAL OR OTHER INSTITUTION – Name (If not in either, Give Street and Number)

7d If Hosp. or Inst. Indicate DOA, OP/Emer. Rm., Inpatient (Specify)

8. BIRTHPLACE (State or Foreign Country)

9. Citizen of What Country

10. Married, Never Married, Widowed, Divorced (Specify)

11 SPOUSE – NAME

12 Was Deceased ever in U.S. Armed Forces (Specify Yes or No)

13. SOCIAL SECURITY NUMBER

14a USUAL OCCUPATION (Give kind of work during most of working life, even if retired)

14b KIND OF BUSINESS OR INDUSTRY

15a. RESIDENCE – STATE

15b COUNTY

15c CITY, VILLAGE OR TOWNSHIP

15d Inside Corporate Limits Specify ☐ YES ☐ NO

16a. FATHER – NAME

16b. BIRTHPLACE (State or Foreign Country)

17 ADDRESS OF DECEDENT (Street and Number, Post Office)

18a MOTHER – MAIDEN NAME

18b. BIRTHPLACE (State or Foreign Country)

19 INFORMANT – NAME (Address)

## MEDICAL CERTIFICATION

20 PART I – DEATH WAS CAUSED BY (Enter only one cause per line (A), (B) and (C).)

IF DIAGNOSIS DEFERRED Check Box ☐

Approximate Interval Between Onset and Death

A IMMEDIATE CAUSE

B DUE TO, OR AS A CONSEQUENCE OF

C. DUE TO, OR AS A CONSEQUENCE OF

SAMPLE

PART II – OTHER SIGNIFICANT CONDITIONS

21a AUTOPSY Specify ☐ YES ☐ NO

21b If Yes, were findings considered in determining cause of death

22a. ACCIDENT, SUICIDE, HOMICIDE OR UNDETERMINED

IF DEFERRED Check Box ☐

22b DATE OF INJURY (Mo., Day, Year, Hour)

22c INJURY AT WORK Specify Yes or No

22d. PLACE OF INJURY (At Home, Farm, Street, Factory, Office Bldg. Etc.)

22e LOCATION (Street or RFD Number, City, Village or Township, County, State)

22f HOW INJURY OCCURRED (Enter Nature of Injury in Part I or Part II, Item 20)

23a CERTIFICATION – PHYSICIAN (Mo Day Year)

I attended the deceased from _____ (Mo Day Year) to _____ (Mo Day Year) and last saw him/her alive on _____. I (did, did not) view the body after death. Death occurred at _____ M at the place and time and on the date stated above and to the best of my knowledge due to the causes stated.

23b CERTIFICATION – MEDICAL EXAMINER OR CORONER

On the basis of the examination of the body and/or the investigation, in my opinion death occurred at _____ M. on the date and due to the causes stated above. The decedent (Mo Day Year) was pronounced dead on _____ at _____ M

23c PHYSICIAN – SIGNATURE

23d MEDICAL EXAMINER OR CORONER – SIGNATURE

23e PHYSICIAN – NAME (Type or Print)

23f MEDICAL EXAMINER OR CORONER – NAME (Type or Print)

23g. MAILING ADDRESS (Physician, Medical Examiner or Coroner)

23h DATE SIGNED (Month, Day, Year)

24a BURIAL, CREMATION, REMOVAL Specify

24b CEMETERY OR CREMATORY NAME

24c LOCATION (City, Village or County) (State)

24d DATE OF BURIAL, CREMATION, REMOVAL (Mo, Day, Year)

25a FUNERAL HOME Name

25b FUNERAL HOME Address

26a DATE FILED BY LOCAL REGISTRAR (Mo, Day, Year)

26b LOCAL REGISTRAR Signature

27 MORTICIAN OR FUNERAL DIRECTOR Signature

HE-K01002

VS3

**STATE COPY**

**MONTANA**

# CERTIFICATE OF DEATH

LOCAL FILE NUMBER — STATE FILE NUMBER

**DECEDENT**

| DECEDENT - NAME FIRST (1.) | MIDDLE | LAST | SEX (2.) | DATE OF DEATH (Mo., Day, Yr.) (3.) |
|---|---|---|---|---|
| | | | | |

| RACE-White, Black, American Indian, etc. (Specify) (4.) | AGE - Last Birthday (Years) (5a.) | UNDER 1 YEAR: Mos. (5b.) | Days | UNDER 1 DAY: Hours (5c.) | Min | DATE OF BIRTH (Mo., Day, Yr.) (6.) | COUNTY OF DEATH (7a.) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| CITY, TOWN, OR LOCATION OF DEATH (7b.) | HOSPITAL OR OTHER INSTITUTION - Name (If not in either, give street and number) (7c.) | IF HOSP. OR INST. Indicate DOA/OP/Emer. Rm., Inpatient (Specify) (7d.) |
|---|---|---|
| | | |

| STATE OF BIRTH (If not in U.S.A., name country) (8.) | CITIZEN OF WHAT COUNTRY (9.) | MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (Specify) (10.) | SURVIVING SPOUSE (If wife, give maiden name) (11.) |
|---|---|---|---|
| | | | |

Usual Residence Where Decedent Lived. If Death Occurred in Institution, See Handbook

| SOCIAL SECURITY NUMBER (12.) | USUAL OCCUPATION (Kind of most of life, even if retired) (13a.) | KIND OF BUSINESS/INDUSTRY (13b.) | WAS DECEDENT EVER IN U.S. ARMED FORCES (Specify Yes or No) (14.) |
|---|---|---|---|
| | | | |

| RESIDENCE - STATE (15a.) | COUNTY (15b.) | CITY, TOWN, OR LOCATION (15c.) | INSIDE CITY LIMITS (Specify Yes or No) (15d.) | STREET AND NUMBER (15e.) |
|---|---|---|---|---|
| | | | | |

**SAMPLE**

**PARENTS**

| FATHER - NAME FIRST MIDDLE LAST (16.) | MOTHER - MAIDEN NAME FIRST MIDDLE LAST (17.) |
|---|---|
| | |

**DISPOSITION**

| INFORMANT - NAME (Type or Print) (18a.) | MAILING ADDRESS STREET OR R.F.D. NO. CITY OR TOWN STATE ZIP (18b.) |
|---|---|
| | |

| CEMETERY OR CREMATORY - NAME (19a.) | LOCATION CITY OR TOWN STATE (19b.) |
|---|---|
| | |
| BURIAL, CREMATION, REMOVAL, OTHER (Specify) (19c.) | MORTUARY OR OTHER - NAME AND ADDRESS (20.) |
| | |
| DATE OF DISPOSITION (Month, Day, Year) (21.) | PERSON IN CHARGE OF DISPOSITION (22. Signature) License Number |
| | |

**CERTIFIER**

| To be Completed by CERTIFYING PHYSICIAN Only | To be Completed by CORONER Only |
|---|---|
| 23a. To the best of my knowledge, death occurred at the time, date and place and due to the cause(a) stated. | 24a. On the basis of examination and/or investigation, in my opinion death occurred at the time, date and place and due to the cause(s) stated. |
| (Signature and Title) | (Signature and Title) |
| DATE SIGNED (Month, Day, Year) (23b.) | HOUR OF DEATH (23c.) M |
| | |
| DATE SIGNED (Month, Day, Year) (24b.) | HOUR OF DEATH (24c.) M |
| | |
| NAME OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER (Type or Print) (23d.) | PRONOUNCED DEAD (Mo., Day, Yr.) (24d. ON) / PRONOUNCED DEAD (Hour) (24e. AT) M |
| | |

NAME AND ADDRESS OF CERTIFIER (PHYSICIAN OR CORONER) (Type or Print) (25.)

| LOCAL REGISTRAR (26a. Signature) | DATE RECEIVED BY LOCAL REGISTRAR (Mo., Day, Yr.) (26b.) |
|---|---|
| | |

**CAUSE OF DEATH**

Conditions If Any Which Gave Rise To Immediate Cause Stating The Underlying Cause Last

27. IMMEDIATE CAUSE (ENTER **ONLY ONE CAUSE** PER LINE FOR (a), (b), AND (c))

PART I (a) _____ Interval between onset & death

DUE TO, OR AS A CONSEQUENCE OF:

(b) _____ Interval between onset & death

DUE TO, OR AS A CONSEQUENCE OF:

(c) _____ Interval between onset & death

| PART II OTHER SIGNIFICANT CONDITIONS - Conditions contributing to death but not related to cause given in Part I(a) | AUTOPSY (Specify Yes or No) (28.) | WAS CASE REFERRED TO CORONER? (Specify Yes or No) (29.) |
|---|---|---|
| | | |

| ACCIDENT, SUICIDE, HOMICIDE, UNDET OR PENDING INVESTIGATION (Specify) (30a.) | DATE OF INJURY (Mo., Day, Yr.) (30b.) | HOUR OF INJURY (30c.) M | DESCRIBE HOW INJURY OCCURRED (30d.) |
|---|---|---|---|
| | | | |

| INJURY AT WORK (Specify Yes or No) (30e.) | PLACE OF INJURY - At home, farm, street, factory, office building, etc. (Specify) (30f.) | LOCATION: STREET OR R.F.D. NO. CITY OR TOWN STATE (30g.) |
|---|---|---|
| | | |

**THIS IS A PERMANENT RECORD. USE TYPEWRITER WITH FRESH BLACK RIBBON.**
**ALL SIGNATURES MUST BE IN BLACK OR NEAR BLACK INK. SEE HANDBOOK FOR INSTRUCTIONS.**

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NORTH DAKOTA

# CERTIFICATE OF DEATH

## State Department of Health

Local Registrar's No. _____ STATE FILE No. _____

TYPE OR PRINT IN PERMANENT INK FOR INSTRUCTIONS SEE HANDBOOK

**DECEDENT**

1 DECEDENT-NAME FIRST MIDDLE LAST | 2 SEX | 3 DATE OF DEATH (Mo Day Yr)

4a. RACE (e.g. White, Black, American Indian, etc.) (Specify) | 4b. ORIGIN OR DESCENT (e.g. Italian, Mexican, German, Puerto Rican, English, Cuban, etc.) (Specify) | 5a. AGE (Last Birthday) (Yrs.) | 5b. UNDER 1 YEAR: MOS / DAYS | 5c. UNDER 1 DAY: HOURS / MINS | 6 DATE OF BIRTH (Mo Day Yr)

7a. COUNTY OF DEATH

7b. CITY, TOWN, OR LOCATION OF DEATH | 7c. HOSPITAL OR OTHER INSTITUTION (Name (if not in either) give street and number) | 7d. IF HOSP. OR INST. indicate O.P., Emer. Rm., Inpatient (Specify)

8. STATE OF BIRTH (If not in U.S.A. name country) | 9. CITIZEN OF WHAT COUNTRY | 10. MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (Specify) | 11. SURVIVING SPOUSE (If wife, give maiden name) | 12. WAS DECEDENT EVER IN U.S. ARMED FORCES? (Specify Yes or No)

IF DEATH OCCURRED IN INSTITUTION SEE HANDBOOK REGARDING COMPLETION OF RESIDENCE ITEMS

13. SOCIAL SECURITY NUMBER | 14a. USUAL OCCUPATION (Give kind of work done during most of working life, even if retired) | 14b. KIND OF BUSINESS OR INDUSTRY

15a. RESIDENCE-STATE | 15b. COUNTY | 15c. CITY, TOWN OR LOCATION | 15d. STREET AND NUMBER | 15e. INSIDE CITY LIMITS (Specify Yes or No)

**PARENTS**

16. FATHER-NAME FIRST MIDDLE LAST | 17. MOTHER-MAIDEN NAME FIRST MIDDLE LAST

18a. INFORMANT-NAME (Type or Print) | 18b. MAILING ADDRESS STREET OR R.F.D. NO. CITY OR TOWN STATE ZIP

**DISPOSITION**

19a. BURIAL, CREMATION, REMOVAL, OTHER (Specify) | 19b. CEMETERY OR CREMATORY-NAME | 19c. LOCATION CITY OR TOWN STATE

20a. FUNERAL SERVICE LICENSEE Or Person Acting As Such (Signature) | 20b. NAME OF FACILITY | 20c. ADDRESS OF FACILITY

**CERTIFIER**

To be Completed by CERTIFYING PHYSICIAN Only

21a. To the best of my knowledge, death occurred at the time, date and place and due to the cause(s) stated. (Signature and Title)

21b. DATE SIGNED (Mo Day Yr) | 21c. HOUR OF DEATH

21d. NAME OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER (Type or Print)

To be Completed by CORONER Only

22a. On the basis of examination and/or investigation, in my opinion death occurred at the time, date and place and due to the cause(s) stated. (Signature and Title)

22b. DATE SIGNED (Mo Day Yr) | 22c. HOUR OF DEATH

22d. PRONOUNCED DEAD (Mo Day Yr) | 22e. PRONOUNCED DEAD (Hour)

23. NAME AND ADDRESS OF CERTIFIER (PHYSICIAN, MEDICAL EXAMINER OR CORONER) (Type or Print)

24a. REGISTRAR (Signature) | 24b. DATE RECEIVED BY REGISTRAR (Mo Day Yr)

**CAUSE OF DEATH**

CONDITIONS IF ANY, WHICH GAVE RISE TO IMMEDIATE CAUSE, STATING THE UNDERLYING CAUSE LAST

25. PART I — IMMEDIATE CAUSE (ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), AND (c).) — Interval between onset and death

(a) _____

DUE TO, OR AS A CONSEQUENCE OF — Interval between onset and death

(b) _____

DUE TO, OR AS A CONSEQUENCE OF — Interval between onset and death

(c) _____

PART II — OTHER SIGNIFICANT CONDITIONS-Conditions contributing to death but not related to cause given in PART I (a).

26a. AUTOPSY (Specify) (Yes or No) | 26b. IF YES, WERE FINDINGS CONSIDERED IN DETERMINING CAUSE OF DEATH

27. WAS CASE REFERRED TO CORONER (Specify Yes or No) | 28a. ACCIDENT, SUICIDE, HOMICIDE, UNDETERMINED OR PENDING INVESTIGATION (Specify) | 28b. DATE OF INJURY (Mo Day Yr) | 28c. HOUR OF INJURY

28d. DESCRIBE HOW INJURY OCCURRED | 28e. INJURY AT WORK (Specify Yes or No) | 28f. PLACE OF INJURY - At home, farm, street, factory, office building, etc. (Specify)

28g. LOCATION STREET OR R.F.D. NO. CITY OR TOWN STATE

29. WAS DECEASED PREGNANT WITHIN 18 MONTHS OF DEATH (Specify Yes or No)

Rev. 1/80

## IMPORTANT INSTRUCTIONS FOR COMPLETION OF CERTIFICATE

Please refer to FUNERAL DIRECTORS' HANDBOOK ON DEATH AND FETAL DEATH REGISTRATION for detailed instructions on completion of each item.

The NORTH DAKOTA CENTURY CODE (23-02.1-19-DEATH REGISTRATION) provides that a death certificate for each death which occurs in this state shall be filed with the local registrar of the district (county) in which the death occurred within fifteen days after such death. If the place of death is unknown, a death certificate shall be filed in the registration district (county) in which a dead body is found within fifteen days after such occurrence; if death occurs on a moving conveyance, a death certificate shall be filed in the registration district (county) in which the dead body was first removed from the conveyance.

The HEALTH STATISTICS REGULATIONS (R23-02.1-01, Sec. 01.200) provide that all certificates and records relating to vital events must either be prepared on a typewriter with a black ribbon or printed legibly in black, nonfading ink; further, that all signatures shall be entered in black, nonfading ink. (NOTE: It is preferred that certificates be typewritten and that the typewriter ribbon be changed frequently to insure legibility in microfilming and issuance of certified copies.)

Items 22 a - e are to be completed only when medical certification is required by a coroner. All items of information on the certificate are to be completed in full or a satisfactory account for their omission given.

Any questions concerning the proper preparation of and filing of certificates are to be directed to the Division of Vital Records, Office of Statistical Services, North Dakota State Department of Health, Bismarck, North Dakota 58505 (Telephone No. 224-2360).

STATE OF SOUTH DAKOTA
DEPARTMENT OF HEALTH

# CERTIFICATE OF DEATH

**140**

TYPE OR PRINT IN PERMANENT INK FOR INSTRUCTIONS SEE HANDBOOK

LOCAL FILE NUMBER

STATE FILE NUMBER

**DECEDENT**

DECEDENT - NAME (FIRST, MIDDLE, LAST) 1 | SEX 2 | DATE OF DEATH (MONTH, DAY, YEAR) 3

RACE (WHITE, NEGRO, AMERICAN INDIAN, ETC - SPECIFY) 4 | AGE—LAST BIRTHDAY (YEARS) 5a | UNDER 1 YEAR (MOS. 5b, DAYS) | UNDER 1 DAY (HOURS 5c, MIN) | DATE OF BIRTH (MONTH, DAY, YEAR) 6 | COUNTY OF DEATH 7a

CITY, TOWN, OR LOCATION OF DEATH 7b | HOSPITAL OR OTHER INSTITUTION—NAME (IF NOT IN EITHER, GIVE STREET AND NUMBER) 7c | IF HOSP OR INST (Indicate OP/Emer. Rm., Inpatient) 7d

STATE OF BIRTH (IF NOT IN U.S.A., NAME COUNTRY) 8 | CITIZEN OF WHAT COUNTRY 9 | MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (SPECIFY) 10 | SURVIVING SPOUSE (IF WIFE, GIVE MAIDEN NAME) 11

SOCIAL SECURITY NUMBER 12 | USUAL OCCUPATION (GIVE KIND OF WORK DONE DURING MOST OF WORKING LIFE, EVEN IF RETIRED) 13a | KIND OF BUSINESS OR INDUSTRY 13b

RESIDENCE—STATE 14a | COUNTY 14b | CITY, TOWN, OR LOCATION AND ZIP CODE 14c | INSIDE CITY LIMITS (SPECIFY YES OR NO) 14d | STREET AND NUMBER 14e

ZIP

**PARENTS**

FATHER—NAME (FIRST, MIDDLE, LAST) 15 | MOTHER—MAIDEN NAME (FIRST, MIDDLE, LAST) 16

INFORMANT—NAME 17a | MAILING ADDRESS (STREET OR R.F.D. NO., CITY OR TOWN, STATE, ZIP) 17b | WAS DECEASED A VETERAN 17c

**CAUSE OF DEATH**

PART I DEATH WAS CAUSED BY (ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), AND (c)) 18 | APPROXIMATE INTERVAL BETWEEN ONSET AND D

IMMEDIATE CAUSE (a) DUE TO, OR AS A CONSEQUENCE OF

CONDITIONS, IF ANY, WHICH GAVE RISE TO IMMEDIATE CAUSE (a), STATING THE UNDERLYING CAUSE LAST (b) DUE TO, OR AS A CONSEQUENCE OF

(c)

CAUSE

WORK

CO. ACC.

PLACE

LINE NO.

PART II OTHER SIGNIFICANT CONDITIONS - CONDITIONS CONTRIBUTING TO DEATH BUT NOT RELATED TO CAUSE GIVEN IN PART I (c) | AUTOPSY (YES OR NO) 19a | WAS CASE REFERRED CORONER? (Specify Yes or No) 19b

ACCIDENT, SUICIDE, HOMICIDE, OR UNDETERMINED (SPECIFY) 20a | DATE OF INJURY (MONTH, DAY, YEAR) 20b | HOUR OF INJURY 20c | HOW INJURY OCCURRED (ENTER NATURE OF INJURY IN PART I OR PART II, ITEM 18) 20d

INJURY AT WORK (SPECIFY YES OR NO) 20e | PLACE OF INJURY (AT HOME, FARM, STREET, FACTORY, OFFICE BLDG., ETC - SPECIFY) 20f | LOCATION (County, City or Town, State) 20g

AUTOPSY

**CERTIFIER**

To be Completed by PHYSICIAN Only

21a To the best of my knowledge, death occurred at the time, date and place and due to the cause(s) stated. (Signature and Title)

DATE SIGNED (Mo Day Yr) 21b | HOUR OF DEATH 21c

To be Completed by CORONER Only

22a On the basis of examination and/or investigation, in my opinion death occurred at the time, date and place and due to the cause(s) stated. (Signature and Title)

DATE SIGNED (Mo Day Yr) 22b | HOUR OF DEATH 22c

CERTIFIER

NAME AND ADDRESS OF CERTIFIER (PHYSICIAN, MEDICAL EXAMINER OR CORONER) (Type or Print) 23

CORONER

**DISPOSITION**

BURIAL, CREMATION, REMOVAL (SPECIFY) 24a | CEMETERY OR CREMATORY—NAME 24b | LOCATION CITY OR TOWN STATE 24c

DATE (MONTH, DAY, YEAR) 24d | FUNERAL HOME—NAME AND ADDRESS 25a | EMBALMER—SIGNATURE & NUMBER (IF NOT EMBALMED—LEAVE BLANK)

FUNERAL DIRECTOR—SIGNATURE AND NUMBER 25b | REGISTRAR—SIGNATURE 26a | DATE RECEIVED BY LOCAL REGISTRAR 26b

F.D. NUMBER

HAS-0276 REV JAN 1978

STATE USE ONLY

DOH 5040
Rev 6-84
Chap 69, Wis Stats

**Type or Print in Permanent Black Ink**

Reserved for Corrections & Amendments

STATE OF WISCONSIN
DEPARTMENT OF HEALTH AND SOCIAL SERVICES

# ORIGINAL CERTIFICATE OF DEATH

LOCAL FILE NUMBER

STATE FILING DATE

STATE DEATH NO.

SAMPLE

## DECEDENT

DECEDENT-NAME First Middle Last — 1

SEX ☐ M ☐ F — 2

DATE OF DEATH (Month O — 3

RACE (e.g., White, Black, Hispanic, American Indian, etc.) — 4

AGE-Last Birthday — 5a. Years

UNDER 1 YEAR — 5b. Mos | Days

UNDER 1 DAY — 5c. Hours | Mins

DATE OF BIRTH (Month, Day, Year) — 6

COUNTY OF DEATH — 7a

CITY, VILLAGE OR TOWNSHIP OF DEATH — 7c

HOSPITAL OR OTHER INSTITUTION-Name ☐ Hospital ☐ Nursing home ☐ Other Instit. (If none of these give street and number) — 7d

IF HOSP OR ☐ DOA — 7e

STATE OF BIRTH (If not in U.S.A., name country) — 8

CITIZEN OF WHAT COUNTRY — 9

MARITAL STATUS ☐ 1 Married ☐ 2 Separated ☐ 3 Divorced ☐ 4 Never Married ☐ 5 Widowed — 10

SURVIVING SPOUSE (If wife, give maiden name) — 11

WAS DECED ARMED FOR — 12 ☐ Ye

SOCIAL SECURITY NUMBER — 13

USUAL OCCUPATION (Give kind of work done during most of working life, even if retired) — 14a

KIND OF BUSINESS OR INDUSTRY — 14b

RESIDENCE-STATE — 15a

COUNTY — 15b

CITY, VILLAGE OR TOWNSHIP OF RESIDENCE — 15c

INSIDE CITY OR VILLAGE LIMITS ☐ Yes ☐ No — 15d

STREET AND NUMBER — 15e

## PARENTS

FATHER-NAME First Middle Last — 16

MOTHER-MAIDEN NAME First Middle — 17

## DISPOSITION

INFORMANT-NAME (Type or Print) — 18a

MAILING ADDRESS Street or R F D No. City or Village State — 18b

☐ 1 Burial ☐ 2 Cremation ☐ 3 Entombment ☐ 4 Removal — 19a

CEMETERY OR CREMATORY-NAME — 19b

LOCATION City or Village State — 19c

FUNERAL SERVICE LICENSEE Or Person Acting As Such Signature — 20a

NAME OF FACILITY — 20b

Funeral Director Lic. No. — 20c

ADDRESS OF FACILITY Street or R F D No. City or Village State Zip — 20d

DATE SIGNED BY FUNERAL SER — 20e

## CERTIFICATION

To be Completed by CERTIFYING PHYSICIAN Only

21a. To the best of my knowledge, death occurred at the time, date and place and due to the cause(s) stated.

Signature and Title

DATE SIGNED (Month Day Year) — 21b

HOUR OF DEATH — 21c. M

NAME OF ATTENDING PHYSICIAN IF OTHER THAN CERTIFIER (Type or Print) — 21d

To be Completed by MEDICAL EXAMINER or CORONER Only

22a. On the basis of examination and/or investigation, in my opinion death occ time, date and place and due to the cause(s) stated.

Signature and Title

DATE SIGNED (Month Day Year) — 22b

HOUR OF DEATH — 22c

PRONOUNCED DEAD (Month Day Year) — 22d

PRONOUNCED DEAD (Hour) — 22e

NAME AND ADDRESS OF CERTIFIER (PHYSICIAN, MEDICAL EXAMINER OR CORONER) (Type or Print) — 23

## CAUSE

PART I — Conditions if any which gave rise to immediate Cause stating if a underlying cause last

IMMEDIATE CAUSE [ENTER ONLY ONE CAUSE PER LINE FOR (a), (b), AND (c).] — (a)

Interval between

DUE TO OR AS A CONSEQUENCE OF — (b)

Interval between

DUE TO OR AS A CONSEQUENCE OF — (c)

Interval between

PART II — OTHER SIGNIFICANT CONDITIONS-Conditions contributing to death but not related to cause given in PART I (a)

AUTOPSY ☐ Yes ☐ No — 26

WAS MEDICAL EXAMINER C CORONER NOTIFIED? ☐ Yes ☐ No — 27

Accident U C O D

National Safety Council Codes

## INJURY

☐ 1 Accident ☐ 2 Suicide ☐ 3 Homicide ☐ 4 Undet ☐ 5 Pend. Invest — 28a

DATE OF INJURY (Month Day Year) — 28b

HOUR OF INJURY — 28c M

DESCRIBE HOW INJURY OCCURRED — 28d

INJURY AT WORK ☐ Yes ☐ No — 28e

PLACE OF INJURY-At home, farm, street, factory, office building, etc. (Specify) — 28f

LOCATION Street or R F D No. City or Village — 28g

## REGISTRAR

24a. Signature

DATE RECEIVED BY REGISTRAR (Month Day — 24b

61

## APPENDIX C
## DATA CODING FORMAT FOR MULTI-STATE FARM-RELATED SUICIDE STUDY

### Death Data

| Item | Total Pos. | Code Structure | Coding Instructions |
|---|---|---|---|
| CERTIFICATE NUMBER | 5 | Identification Number<br><br>In state deaths<br>00001 - 69999<br>Out of state deaths<br>90001 - 99999 | This applies for MN—other states' certificate numbers may vary in structure. |
| VITAL EVENT DATE | | | |
| Month | 2 | January——01 July——07<br>February—02 August——08<br>March——03 September—09<br>April——04 October——10<br>May——05 November—11<br>June——06 December—12<br>Unknown or not stated——99 | |
| Day | 2 | 01 - 31<br>Unknown or not stated——99 | |
| Year | 2 | Last two digits of year | |
| SEX | 1 | Male——1<br>Female——2<br>Undetermined or not stated-9 | |
| RESIDENCE OF DECEASED | | | |
| Country/ State | 2 | Iowa——16<br>Minnesota——24<br>Montana——27<br>North Dakota——35<br>South Dakota——42<br>Wisconsin——50 | NCHS Code Structure for U.S. States. |
| County | 3 | Minnesota Counties—001-173 (See Minn. Health Code)<br>Counties of other U.S. States——NCHS, Vital Records Geographic Classification, 1970 | For MN use only. |

## DATA CODING FORMAT FOR MULTI-STATE FARM-RELATED SUICIDE STUDY

### Death Data

| Item | Total Pos. | Code Structure | Coding Instructions |
|---|---|---|---|
| AGE - UNITS | 1 | Years - less than 100——0<br>Years - 100 or more——1<br>Months——2<br>Weeks——3<br>Days——4<br>Hours——5<br>Minutes——6<br>Age Unknown——9 | Enter highest order of age units. |
| AGE - NUMBER OF UNITS | 2 | Enter as stated.<br>Unknown or not stated——99 | 1. When age is stated as 100 years or more, code Age Units (above) = 1, and code balance as Number of Units.<br>Example: Age 105 - Code 1 for units (in item above) and 05 for number of units.<br>2. When age is stated as 12 years or less, compare date of birth and date of death to insure assignment of the correct unit code since months are sometimes erroneously reported as year.<br>3. If age is not stated, derive the age by reference to date of birth and date of death. If date of birth is not given but unit is indicated as other than years, code the appropriate unit and enter 99 for number of units. If unit is indicated as years, code unit 9 and number of units 99. |

DATA CODING FORMAT FOR
MULTI-STATE FARM-RELATED SUICIDE STUDY

Death Data

| Item | Total Pos. | Code Structure | Coding Instructions |
|---|---|---|---|
| AGE - NUMBER OF UNITS (continued) | | | 4. Fractions given in number of units should be ignored<br><br>5. If number of units are given with approximately, about, etc., enter as stated. |
| MARITAL STATUS | 1 | Married or separated------1<br>Never married or annulled--2<br>Widowed------3<br>Divorced------4<br>Unknown------9 | 1. Code 2 if the following are noted: "Indian marriage", "never", "NM", "none".<br><br>2. Code 1 if "yes" is noted.<br><br>3. Code 9 if the following are noted: "no", "not married", "unmarried".<br><br>4. If the marital status item is blank and the age of decedent is less than 12 years, code 2. |
| UNDERLYING CAUSE OF DEATH | 4 | ICD-9 Codes | |
| TIME OF DAY | 5 | 1200A - 1159P | Code as indicated on death records, adding a "P" in last position for PM or an "A" in last position for AM.<br><br>Examples:<br><br>4:02 PM = 0402P<br>12:01 AM = 1201A |

## DATA CODING FORMAT FOR MULTI-STATE FARM-RELATED SUICIDE STUDY

### Death Data

| Item | Total Pos. | Code Structure | Coding Instructions |
|---|---|---|---|
| OCCUPATION | 1 | 1 = Farmer, Farming, Rancher<br>2 = Farm Laborer, Farm Hand<br>3 = Housewife, Homemaker<br>4 = Student<br>5 = Unemployed<br>6 = Dual occupation (farming and other)<br>7 = Hobby Farming<br>8 = Other<br>9 = Unknown | Do not include mechanics, truck drivers, etc. connected with farm industry, but not actually involved in "farming".<br><br>Code "4", student, when age of deceased is under 16 or occupation listed as student.<br><br>Code "5", unemployed, when occupation is listed "none" or "unemployed".<br><br>Code "6" if more than one occupation is listed, e.g. "teacher/farmer".<br><br>Code "7", if deceased lived on "hobby farm", e.g., lived on farm, worked in town, or was student/housewife and lived on "hobby farm".<br><br>Code "8" if occupation of deceased fits none of the above categories.<br><br>Code "9", unknown, when occupation is listed "unknown" or when occupation is blank and querying has not produced an answer to the occupation item. |
| DAY OF WEEK | 1 | 1 = Sunday<br>2 = Monday<br>3 = Tuesday<br>4 = Wednesday<br>5 = Thursday<br>6 = Friday<br>7 = Saturday | MN will computer generate if days of week are not available. |

DATA CODING FORMAT FOR
MULTI-STATE FARM-RELATED SUICIDE STUDY

## Death Data

| Item | Total Pos. | Code Structure | Coding Instructions |
|---|---|---|---|
| RACE | 1 | 1 = White<br>2 = Black<br>3 = American Indian<br>4 = Other | |