A close-up, high-angle portrait of a man's face, looking slightly to the right. He has light blue eyes, a mustache, and a goatee. He is wearing a red shirt. The background is a dark, textured grey.

North Dakota Injury Prevention Plan

2005



North Dakota Department of Health
Division of Injury Prevention and Control



NORTH DAKOTA
DEPARTMENT OF HEALTH
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August 2006

To Our Partners in Injury Prevention:

Injuries are a major public health concern in both North Dakota and the United States. In fact, unintentional injury is the leading cause of death for people ages 1 through 44 and the second-leading cause of death for people ages 45 through 54 in North Dakota.

This document reports the leading causes of injuries and deaths from injuries in North Dakota and is designed to help health professionals and injury prevention specialists develop initiatives to reduce and prevent injury and deaths. It also offers specific strategies for targeting affected populations who are at the greatest risk.

In order to achieve Healthy People 2010 goals and objectives, the North Dakota Department of Health, Division of Injury Prevention and Control, continues to identify and implement prevention strategies partners across the state.

Most injuries are predictable and preventable. I encourage you to join us in working to reduce injuries and improve the health of all of our citizens.

Sincerely,

Terry L. Dwelle, MD, MPHTM
State Health Officer

TLD:lrr
Enc.

North Dakota

Injury Prevention Plan

2005

Governor John Hoeven

State Health Officer Terry Dwelle, M.D., M.P.H.T.M.



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2005 North Dakota Injury Prevention Plan

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NORTH DAKOTA INJURY PREVENTION PLAN

2005

EXECUTIVE SUMMARY

Injuries are a public health problem in North Dakota and in the United States, resulting in significant numbers of deaths, hospitalizations and emergency department visits. This results in not only the emotional and physical suffering, but also economic costs associated with deaths and injuries. This report was written to better understand the reasons for injuries and deaths in North Dakota and, through that understanding, to devise strategies to best address the injury problem. The committee writing this plan consisted of people from state government, private nonprofit agencies, business, the Indian Health Service, Tribal representatives, and the medical field.

Data was gathered from North Dakota Department of Health's Vital Records Death Certificate, the State Trauma Registry, Emergency Medical Services Ambulance Trip Reports, the North Dakota Department of Transportation Traffic Safety Division, the Hennepin County Regional Poison Control Center, and the North Dakota Council on Abused Women's Services. While the data has some limitations, it does present an overall picture of injury and death in North Dakota.

Unintentional injuries such as motor vehicle crashes and falls are the leading cause of death for individuals ages 1 to 34 and the second-leading cause for ages 35 to 44. From 1999 through 2003, motor vehicle crashes were the leading cause of injury death for all North Dakotans. Males accounted for 62 percent of the fatalities from motor vehicle crashes, while the groups with the highest percentage of crash injuries were ages 10 to 19, with 25 percent of the total reported to the Trauma Registry, and 20 to 29, with 19.7 percent. Lack of seat belt use and/or abuse of alcohol while driving were indicated as factors in many of the injury crashes and fatalities.

Suicide was the second-leading cause of death. They accounted for 21.6 percent of all injury fatalities. An average of 76.6 people committed suicide per year from 1999 through 2003. The age group 30 to 39 had the highest death rate from suicide followed closely by the age group 40 to 49. While females are three times more likely to attempt suicide, males are more likely to complete it by using a more lethal method. Males comprised 81 percent of all suicides using firearms and hanging as means to complete the act.

Falls were the third-leading cause of injury death following motor vehicle crashes and suicides, accounting for 19.5 percent of all injury fatalities. During 1999-2003, one person required an ambulance run for a fall-related event every 4.4 hours while one person died from a fall-related event every 5.3 days and required admission to the

hospital every 1.2 days. North Dakota's death rate from falls is far above the rate for the United States for people older than the age of 85 and considerably higher for people ages 75 to 84. With our aging population, this puts a huge economic burden on our already strapped Medicaid and Medicare system.

Poisoning is another major concern for injury in North Dakota. Calls regarding information or an exposure event for children younger than six made up a significant number of the calls to the Hennepin Regional Poison Center, which handles the toll-free hotline for our state. Most of these calls originated from the home setting and were seeking advice regarding ingestion of a substance.

New victims of domestic violence were overwhelmingly women between the ages of 18 to 44. Alcohol use by the abuser was evident in more than 30 percent of all the cases. More than 82 percent of all domestic violence victims had been exposed to a violent relationship for longer than one year and many for a time period of one to five years. The number of domestic violence victims who were disabled increased from 1999 to 2003.

Through 21 domestic violence and sexual assault centers, data was collected that reflects only the victims who sought services. It is believed that this data is under-reported because of the fears that a victim will not be believed, the victim is embarrassed or the victim does not have the knowledge of how rape/sexual assault is legally defined. From 1999 through 2003, 3,930 new victims of sexual assault received services in North Dakota. Sexual assaults to individuals younger than 30 accounted for 73 percent of all the cases, while children ages 13 through 17 accounted for 23 percent. Females comprised 91 percent of the total of new victims, while 96 percent of the assailants were men. American Indians comprised 12 percent of the total number of new victims, which is disproportionate to the population across the state.

Strategies to address the injury issues in the state of North Dakota include:

- Public information and education campaigns, including social norms campaigns.
- Support of law enforcement activities to enforce the laws, in particular child passenger safety laws and impaired driving laws.
- Support of efforts to reduce motor vehicle fatalities and injuries in high-risk populations such as American Indians and young drivers.
- Provision of education to reduce fall hazards among the elderly.
- Dedication of personnel and fiscal resources to address suicide prevention efforts.
- Development of a statewide response team to respond to suicide clusters.
- Increased treatment services for people attempting suicides.
- Support of statewide hotlines.
- Increased capacity to collect and analyze more data.
- Trainings for professionals and the public.
- Development of community-based prevention programs.
- Creation of better data collection systems.
- Encouragement of worksite wellness initiatives.

I. Acknowledgements

The following people assisted in the development, writing, review and finalization of this plan. Their input and insight was greatly appreciated.

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II. Introduction

A. Magnitude of the Problem

Throughout America's history, two categories of health problems have been the leading causes of years of productive life lost (YPLL): infectious diseases and injuries. Improvements in our standard of living and significant gains in public health and medical care have dramatically diminished the impact of infectious diseases on our daily lives. As far back as 1966, the National Academy of Sciences' Division of Medical Sciences and the National Research Council (NRC) published *Accidental Death and Disability: The Neglected Disease of Modern Society* (NRC, 1966). In the mid 1980s, the Committee on Trauma Research and the Institute of Medicine issued a landmark report to Congress entitled *Injury in America* (NRC, 1985), which recognized injury as a significant public health problem and led to the establishment of the U.S. Centers for Disease Control and Prevention's National Center for Injury Prevention and Control.

Injuries have continued to exact a toll on our society. In terms of causes of death, injury (both intentional and unintentional) consistently ranks in the top 10 causes for all age groups, and ranks at the top for children, adolescents and young adults. For individuals age 1 through 34, unintentional injuries are the leading cause of death. For the age group 35 through 44, unintentional injuries are the second leading cause of death, and are the third leading cause of death for the age group 45 through 54. For all ages combined, unintentional injury is the fifth leading cause of death. (Figure 1)

The Office of Statistics and Programming, National Center for Injury Prevention and Control (NCIPC), U.S. Centers for Disease Control and Prevention (CDC) reported that 157,058 people died in the United States in 2001 from injuries, a rate of 54.87 per 100,000 population. However, the scope of the injury problem is not measured in deaths alone. Non-fatal injuries play a key role in the overall impact of injuries on our society. In 2003, the Office of Statistics and Programming, NCIPC, CDC estimated that more than 29 million people sustained non-fatal injuries, a rate of just over 10,000 injuries per 100,000 population. In addition to the significant direct cost of medical care (both acute and long term) related to injuries, the cost of injury includes costs associated with vocational rehabilitation, administrative costs of delivering health and indemnity insurance, home modifications, loss of productivity for the injured person and his/her employer, property damage, legal fees, and the cost of fire and police services.

**10 Leading Causes of Death, United States
1999 – 2002, All Races, Both Sexes**

Rank	Age Groups										All Ages		
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65-74		75-84	85+
1	Congenital Anomalies 22,352	Unintentional Injury 7,079	Unintentional Injury 5,309	Unintentional Injury 6,315	Unintentional Injury 57,592	Unintentional Injury 48,067	Malignant Neoplasms 65,906	Malignant Neoplasms 193,914	Malignant Neoplasms 361,686	Malignant Neoplasms 594,244	Heart Disease 876,785	Heart Disease 1,002,714	Heart Disease 2,833,041
2	Short Gestation 17,836	Congenital Anomalies 2,131	Malignant Neoplasms 2,028	Malignant Neoplasms 2,078	Homicide 20,453	Suicide 20,014	Unintentional Injury 63,299	Heart Disease 144,443	Heart Disease 254,286	Heart Disease 480,504	Malignant Neoplasms 660,376	Malignant Neoplasms 309,083	Malignant Neoplasms 2,213,968
3	SIDS 9,700	Malignant Neoplasms 1,660	Congenital Anomalies 786	Suicide 1,074	Suicide 15,876	Homicide 18,088	Heart Disease 53,795	Unintentional Injury 51,936	Chronic Low Respiratory Disease 44,482	Chronic Low Respiratory Disease 124,340	Cerebro-vascular 225,158	Cerebro-vascular 266,934	Cerebro-vascular 661,237
4	Maternal Pregnancy Comp. 6,010	Homicide 1,570	Homicide 603	Homicide 882	Malignant Neoplasms 6,871	Malignant Neoplasms 15,787	Suicide 26,514	Liver Disease 27,497	Cerebro-vascular 39,113	Cerebro-vascular 92,331	Chronic Low Respiratory Disease 193,360	Influenza & Pneumonia 124,962	Chronic Low Respiratory Disease 494,019
5	Placenta Cord Membranes 4,133	Heart Disease 754	Heart Disease 412	Congenital Anomalies 834	Heart Disease 4,121	Heart Disease 12,349	HIV 23,725	Cerebro-vascular 23,539	Diabetes Mellitus 37,875	Diabetes Mellitus 67,022	Diabetes Mellitus 90,028	Alzheimer's Disease 119,122	Unintentional Injury 404,039
6	Respiratory Distress 4,063	Influenza & Pneumonia 455	Benign Neoplasms 222	Heart Disease 663	Congenital Anomalies 1,872	HIV 9,106	Homicide 13,932	Suicide 22,768	Unintentional Injury 30,793	Unintentional Injury 31,827	Influenza & Pneumonia 77,674	Chronic Low Respiratory Disease 112,004	Diabetes Mellitus 282,321
7	Unintentional Injury 3,648	Septicemia 373	Chronic Low Respiratory Disease 180	Chronic Low Respiratory Disease 338	HIV 780	Diabetes Mellitus 2,442	Liver Disease 13,163	Diabetes Mellitus 20,528	Liver Disease 23,258	Nephritis 28,351	Alzheimer's Disease 71,766	Diabetes Mellitus 55,629	Influenza & Pneumonia 256,758
8	Bacterial Sepsis 2,904	Perinatal Period 308	Influenza & Pneumonia 177	Cerebro-vascular 190	Chronic Low Respiratory Disease 762	Cerebro-vascular 2,350	Cerebro-vascular 10,089	HIV 16,643	Suicide 12,776	Influenza & Pneumonia 27,547	Nephritis 51,378	Nephritis 48,871	Alzheimer's Disease 206,812
9	Circulatory System Disease 2,619	Benign Neoplasms 234	Septicemia 156	Influenza & Pneumonia 186	Cerebro-vascular 748	Congenital Anomalies 1,875	Diabetes Mellitus 7,990	Chronic Low Respiratory Disease 13,160	Nephritis 12,703	Septicemia 23,788	Unintentional Injury 49,632	Unintentional Injury 48,146	Nephritis 153,230
10	Intrauterine Hypoxia 2,360	Chronic Low Respiratory Disease 213	Cerebro-vascular 122	Benign Neoplasms 172	Influenza & Pneumonia 716	Liver Disease 1,583	Influenza & Pneumonia 4,085	Homicide 7,805	Septicemia 12,084	Liver Disease 21,991	Septicemia 41,009	Septicemia 36,703	Septicemia 128,007

Figure 1 **WISQARS™** Produced By: Office of Statistics and Programming, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention
Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System

Measurement of injuries is essential in the determination of the overall magnitude of injury as a public health problem. Researchers have developed the injury pyramid (Figure 2) as a tool to project injury surveillance estimates and highlight the progression of injury.

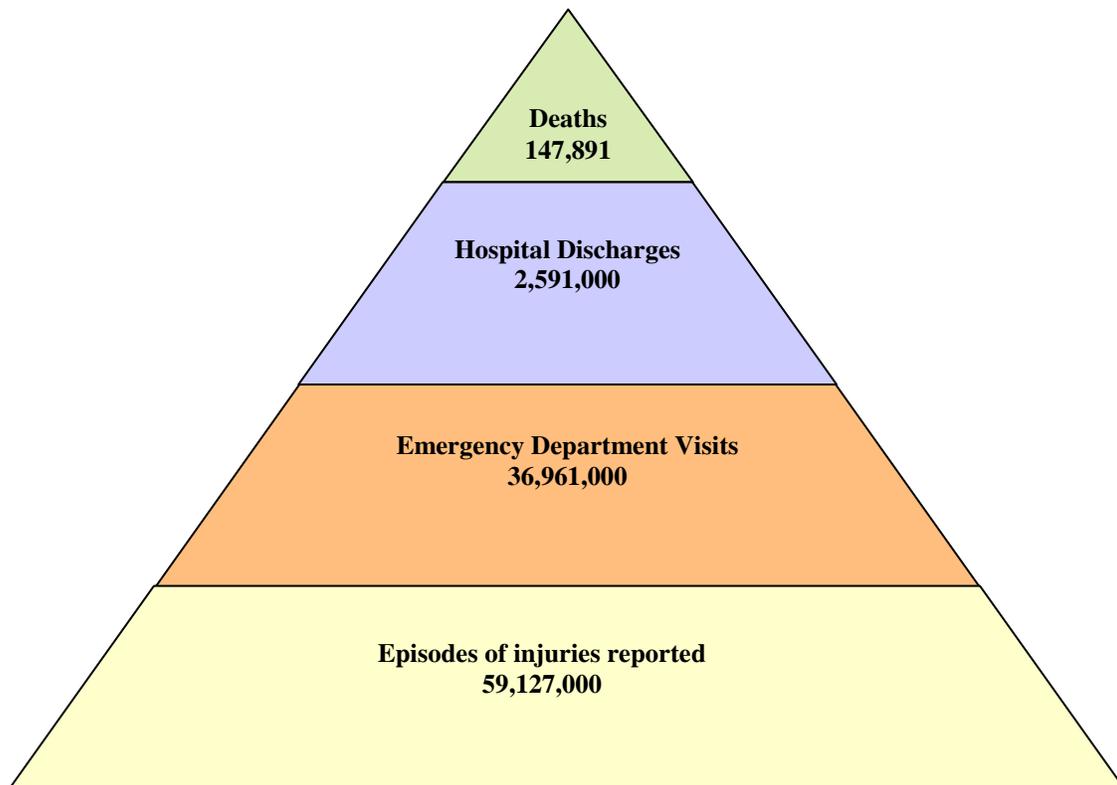


Figure 2. Reducing the Burden of Injury, Institute of Health 1999. Data source: Fingerhut and Warner, 1997

North Dakota is not immune to the injury problem. Unintentional injury is the leading cause of death for age groups 1 through 44 and is the third leading cause of death for age group 45 through 54. Unintentional injury is the fifth leading cause of death for the age group 55 through 64, and for all ages in the state. (Figure 3.) The Office of Statistics and Programming, NCIPC, CDC estimates the non-fatal injury rate for the United States at just over 10,000 injuries per 100,000 population. Utilizing that rate, North Dakotans would sustain approximately 63,000 non-fatal injuries per year.

10 Leading Causes of Death, North Dakota
1999 - 2002, All Races, Both Sexes

Rank	Age Groups										All Ages
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Congenital Anomalies 69	Unintentional Injury 10	Unintentional Injury 10	Unintentional Injury 15	Unintentional Injury 171	Unintentional Injury 92	Unintentional Injury 120	Malignant Neoplasms 364	Malignant Neoplasms 705	Heart Disease 5,911	Heart Disease 6,835
2	SIDS 41	Congenital Anomalies 6	Malignant Neoplasms 3	Malignant Neoplasms 5	Suicide 51	Suicide 57	Heart Disease 118	Heart Disease 272	Heart Disease 497	Malignant Neoplasms 4,168	Malignant Neoplasms 5,396
3	Short Gestation 26	Malignant Neoplasms 6	Benign Neoplasms 1	Suicide 5	Malignant Neoplasms 13	Malignant Neoplasms 21	Malignant Neoplasms 110	Unintentional Injury 111	Chronic Low. Respiratory Disease 87	Cerebro-vascular 1,820	Cerebro-vascular 1,945
4	Maternal Pregnancy Comp. 17	Homicide 3	Congenital Anomalies 1	Heart Disease 3	Heart Disease 8	Heart Disease 20	Suicide 65	Liver Disease 47	Cerebro-vascular 69	Chronic Low. Respiratory Disease 1,076	Chronic Low. Respiratory Disease 1,198
5	Placenta Cord Membranes 8	Influenza & Pneumonia 1	Heart Disease 1	Anemias 1	Congenital Anomalies 5	Homicide 11	Liver Disease 27	Suicide 46	Unintentional Injury 64	Alzheimer's Disease 876	Unintentional Injury 999
6	Respiratory Distress 7	Meningo-coccal Infection 1	Influenza & Pneumonia 1	Chronic Low. Respiratory Disease 1	Homicide 5	Liver Disease 8	Cerebro-vascular 14	Cerebro-vascular 39	Diabetes Mellitus 60	Diabetes Mellitus 700	Alzheimer's Disease 882
7	Circulatory System Disease 5	Congenital Anomalies 1	Influenza & Pneumonia 1	Congenital Anomalies 1	Chronic Low. Respiratory Disease 2	Influenza & Pneumonia 5	Homicide 13	Diabetes Mellitus 39	Liver Disease 52	Influenza & Pneumonia 600	Diabetes Mellitus 816
8	Intrauterine Hypoxia 5	Homicide 1		Homicide 1	Seven Tied 1	Diabetes Mellitus 4	Diabetes Mellitus 12	Chronic Low. Respiratory Disease 27	Suicide 30	Unintentional Injury 404	Influenza & Pneumonia 647
9	Neonatal Hemorrhage 5	Meningitis 1		Meningitis 1	Seven Tied 1	HIV 4	Congenital Anomalies 8	Influenza & Pneumonia 11	Influenza & Pneumonia 22	Nephritis 239	Suicide 311
10	Atelectasis 4	Septicemia 1		Septicemia 1	Seven Tied 1	Four Tied 3	HIV 6	Congenital Anomalies 10	Septicemia 15	Hypertension 223	Nephritis

Figure 3. Produced by the Office of Statistics and Programming, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (CDC).

B. Injury in North Dakota

During the late 1970s to the late 1980s, injury began to become recognized as a serious public health problem on the federal level, due in large part to several landmark publications that scientifically documented the cost and burden of injury. These publications also pointed to the fact that injury is not random and that risk factors contribute to the frequency and severity of injury events. Congressional action resulted in the establishment of injury surveillance and prevention programming in a number of federal agencies, such as the Health Resources Services Administration's Maternal and Child Health Bureau (MCH), Centers for Disease Control and Prevention's National Center for Injury Prevention and Control, the National Institute for Occupational Safety and Health (NIOSH) and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA), which subsequently began supporting states' injury prevention efforts in the states.

The North Dakota Department of Health (NDDoH) has a long history of support for injury prevention programming. An Injury Prevention Program within the NDDoH's Division of Maternal and Child Health (MCH) was established in the late 1970s with a child passenger safety project and expanded to other injury prevention issues in the mid-1980s. Issues addressed in this program include occupant protection, child passenger safety (public information and education, car seat distribution and checkups, legislation), bike safety, product safety, shaken baby syndrome, poison prevention and adolescent suicide prevention. The program is funded through the Maternal and Child Health Block Grant and through grants from the North Dakota Department of Transportation. The program also serves as the state designee for the U.S. Consumer Product Safety Commission. The Injury Prevention Program has been active in policy establishment and has been involved in legislation dealing with child passenger safety, seat belt usage, personal flotation devices (PFDs), graduated licensing of minor drivers, bike helmet usage, seat belts on school buses and children riding in the back of pickup trucks.

In addition, the NDDoH's Division of Maternal and Child Health Division established a Domestic Violence/Rape Crisis Program within the division in 1987. The program manages numerous federal and state funds that are distributed to domestic violence and rape crisis agencies located throughout the state. These agencies and the state coalition are dual programs servicing victims of sexual violence or domestic violence. The Domestic Violence/Rape Crisis Program collaborates with the North Dakota Council on Abused Women's Services/Coalition Against Sexual Assault in North Dakota on grants and statewide policies, as well as monitoring and providing technical assistance to local agencies.

In the mid-1980s, the NDDoH's Division of Disease Control received a CDC grant that established an injury surveillance and prevention program within the division. This program conducted hospital-based injury surveillance through 1994 and initiated a number of prevention programs targeting adolescent traumatic brain and spinal cord injury, adolescent agricultural injury, fall prevention in care centers (nursing homes) and community-based injury prevention through local emergency medical services squads. Two programs funded through this grant initiative continue to be conducted across the state: the North Dakota State University Extension Service's Tractor Safety Certification Course and the North Dakota Farm Bureau's ABC – Always Be Careful on the Farm agricultural safety program.

In 1990, the Division of Disease Control was the recipient of a National Institute for Occupational Safety and Health grant that established an Agricultural Health and Safety Program within the division. This program conducted clinic and hospital-based agriculture-related injury and illness surveillance. This program worked closely with the state's agricultural community (North Dakota Farm Bureau, North Dakota Farmers Union and Extension Service) in developing prevention initiatives to reduce farm injuries, chemical poisonings and agricultural-related illnesses.

As indicated, different federal funding sources resulted in injury programming being located in different divisions within the NDDoH. Although the programs collaborated to avoid any duplication of efforts, they did operate separately.

In October 2000, the Division of Emergency Medical Services (EMS) was awarded a grant from the National Center for Injury Prevention and Control (NCIPC), Centers for Disease Control and Prevention (CDC) for "Core State Injury Surveillance and Program Development." The primary objectives of this grant were to develop a comprehensive injury surveillance system utilizing existing data sets, establish a focal point for injury within the NDDoH, establish an injury prevention advisory committee and develop a state plan with the assistance of the advisory committee.

In September 2001, the NDDoH requested a State Technical Assessment Team (STAT) review from the State and Territorial Injury Prevention Directors Association (STIPDA). The STAT process was designed to assist states in developing and enhancing injury prevention programming.

The STAT report reflected that the NDDoH was doing a good job on injury prevention, given the limited resources and staff. One of the report recommendations was to develop a coordinated, comprehensive injury prevention program that encompassed both injury programs in the Division of Maternal and Child Health Division and the Division of Emergency Medical Services Division. In 2003, the DoH underwent a strategic planning process. As a result of that process, the divisions of the Maternal and Child Health and the Health Promotion and Education were combined into the Community Health Section and six new divisions were formed. One of the new divisions is the Division of Injury Prevention and Control. Injury programming that was housed in separate divisions is now located within the same division. The Division of Injury Prevention and Control contains the following programs: Injury Prevention, Injury Surveillance, Domestic Violence/Rape Crisis and Lead Screening. A second recommendation was to develop a state strategic injury prevention plan, which will be reflected in this document.

C. Data Sources

The state of North Dakota does not have a single, comprehensive health information data set that can be utilized to identify and analyze injuries occurring in the state. In analyzing existing health data sets, injuries are sometimes identified in medical data sets through medical diagnostic codes referred to as International Classification of Disease Codes, or more commonly called ICD9 or ICD10 codes. This coding identifies the resulting medical condition such as fracture, sprain, strain, contusion, burn, amputation, etc. In other data sets, a descriptive diagnostic term, such as leg fracture, is utilized. How the person became injured or what caused the injury is identified through

the External Cause of Injury Code, or commonly referred to as an Ecode. Ecodes specify the event, such as a motor vehicle crash, explosion, etc. Ecodes also can contain a sub-code that further delineates the injury event; for example, motor vehicle crash involving another vehicle. In some data sets, the cause is not identified through Ecode usage; rather, a descriptive cause term is used, such as fall. Ecodes are less frequently included in other important injury data sources, such as hospital discharge data, emergency room records and ambulance run reports. Ecodes are not used for reimbursement, so they are frequently dropped in abstracting records for computer entry. They can be incomplete and, therefore, not show the entire picture of the injury.

Data sources that were utilized in developing this plan include NDDoH Vital Records Death Certificate data set, NDDoH State Trauma Registry, NDDoH Emergency Medical Services (EMS) Ambulance Trip Report data set, North Dakota Department of Transportation Traffic Safety Division crash reports, Hennepin County Regional Poison Control Center (Minneapolis, Minn.) poison data set, and the North Dakota Council on Abused Women's Services domestic violence and sexual assault data sets.

1. Vital Records Death Certificate – All deaths in North Dakota are recorded through the death certificate process, and the Division of Vital Records within the NDDoH maintains the final reports. Death certificate reports are coded by the Division of Vital Records to reflect the medical condition contributing to or directly causing the fatality. The codes used are from the ICD9 or ICD10 codes. In the case of an injury event, the external cause of the injury, or Ecodes for short, is used; for instance, an ICD9 code 800 (fracture of the skull) with corresponding Ecode 813 (motor vehicle crash involving another vehicle).

Data Limitations – North Dakota does not have a statewide coroner system. Local morticians, local law enforcement and local medical personnel provide determination of death and causation information. The lack of staff and resources needed to fully investigate a case can result in missing or incorrect data, for example, ruling on a drug overdose as an accidental overdose versus ruling the case as a suicide. Although this data shows fatalities, it doesn't give the complete picture of injuries in the state.

2. State Trauma Registry – The state of North Dakota has a formal trauma system and all hospitals are required to report trauma cases to the State Trauma Registry, which is located within the Division of Emergency Medical Services, NDDoH. Trauma case definition includes a minimum trauma score and hospitalization for at least 48 hours or more, or admission to an operating room. Cases are coded utilizing ICD9 codes and Ecodes, which allow for identification of injuries and cause of injury events.

Data Limitations – Data from the registry is incomplete because not all hospitals were able to transmit their data to the state system due to incompatible software. In the year 2005, two out of six level II hospitals were submitting their data. These were not consistently transmitted. However, the hospitals are in the process of converting their systems, and more complete data will be available in late 2005. Poisonings are captured in the North Dakota Trauma Registry only if they are a trauma code/alert or they have an additional injury code. The utility of this data is

questionable. Because of the limited number of hospitals that submit their data, it is hard to assemble a complete picture of injuries in North Dakota.

3. Emergency Medical Services Ambulance Trip Report – Licensed ambulances in North Dakota are required to submit a Pre-Hospital Care Report every time they are dispatched. Completed reports are forwarded to the Division of Emergency Medical Services (EMS) for entry into the Ambulance Trip Report data set. A medical data management consultant manages the data for the Division of EMS. Coding for cause of the event that triggered the ambulance run is accomplished through a Type of Call category (descriptive cause listing rather than an Ecode) that lists 15 injury-related causes. Examples are motor vehicle crashes, assaults, ATVs, falls, electrical, etc.

Data Limitations – Data from the registry is incomplete. Not all hospitals were able to transmit their data to the state system because of incompatible software. The hospitals are in the process of converting their systems and more complete data will be available in late 2005. The usefulness of the data is questionable, as this may not capture the complete picture of injuries in North Dakota.

4. North Dakota Department of Transportation Traffic Safety Office – Vehicle crash data is a compilation of information from vehicle crash reports filed by law enforcement agencies (city, county and state) from across the state. Information is collected regarding drivers, passengers, vehicle types, highways and crash events. Additional information is obtained from the state toxicologist, North Dakota Highway Patrol and responding emergency medical services squads. Information is available on restraint usage, alcohol and drug involvement, age, gender and contributing factors (i.e., speeding, careless driving, etc).

Data Limitations – There are some limitations to the data collected. It doesn't have the ability to assess most drug- and many alcohol-related crashes, and there is no linkage of crash data to hospital-based data. Consequently, there exists no system to correlate motor vehicle crash case information to hospital data in order to determine the level of severity resulting from specific types of crashes, restraint use or non-use, helmet use or non-use, type of vehicle involved, etc.

5. Hennepin County Regional Poison Control Center – The Hennepin County Regional Poison Control Center fields all calls originating out of the North Dakota area code to the National Poison Hotline (800.222.1222). At the time of the call, a determination is made whether or not an actual exposure to a toxic substance occurred. Information is collected on the site of origin of the call (home, day care, medical facility, etc.); age of the exposed individual; route of exposure (ingestion, dermal, inhalation, etc.); and agent involved (medication, chemical, etc). Effect on the exposed individual is ascertained and a recommendation for care is conveyed to the caller to either treat on site or transport to a medical facility for treatment.

Data Limitations – The data set is limited to only poisoning or potential poisoning cases that call the hotline. Detailed information regarding the circumstances of how the exposure occurred (cause) is not collected. For example, a case of toxic chemical exposure would reveal the agent involved, but not how the exposure occurred

(agents not stored properly). Medication exposure is identified, but no information is available as to whether the medications were left out for easy access or if the individual made a concentrated effort to access the medications that were stored correctly.

6. North Dakota Council on Abused Women's Services/Coalition Against Sexual Assault in North Dakota – Domestic violence and sexual assault case information is collected through 21 community program sites across North Dakota. These 21 sites provide services for all of the state's counties. Case information collected, at a minimum, includes age, gender, new victim status, disability status, referral status, gender of perpetrator, weapons used, alcohol involvement, whether crime was reported to law enforcement and place of occurrence of the incident.

Data Limitations – The data is solely victim-based. Underreporting of cases also occurs, as not all victims seek program services. As the services provided by the community program sites target a specific audience, the data will reflect the composition of the target audience.

7. Bureau of Criminal Investigation – While no data was used from this source, it is a valid and reputable source of information. It will be considered for future plans and projects.
8. Youth Risk Behavior Survey (YRBS) - Data has been cited from the 2003 YRBS for suicide. Important statistics for reference to middle school and high school students in regards to drinking and driving, seat belt usage, sexual assault, weapon carrying, school and dating violence, and motorcycle helmet use can be used for future planning.
9. Behavior Risk Factor Surveillance System (BRFSS) – No data has been cited from this source. In future planning, some of the statistics that may be useful will be adult seat belt use, drinking and driving, falls and smoke detector use.

III: Methodology

Data was collected by requesting injury data reports from data set managers of the aforementioned data sets. Data was generally depicted by N (number of events/frequency) or a percentage representation of N. Breakdowns included a general overview of the data set (leading causes, age groups, gender, race if available) with additional breakdowns reflecting cross tabulation categories, such as cause(s) by age, cause(s) by gender, cause(s) by race, and, depending on the data set, other categorical depictions such as suicide method selection by gender or route of poisoning exposure. Rates were calculated for specific fatality-cause categories. All fatality rates were calculated per 100,000 population using the U.S. Census Bureau's file "Census 2000 Summary File 1 (SF 1) 100-Percent Data." This file is located on the Internet at http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=DEC&_lang=en&_ts= .

These injury data reports representing the various data sets were distributed to the members of the North Dakota Injury Advisory Committee. The broad-based, statewide composition of the advisory committee was determined by prior participation in a former injury advisory committee,

grant guidelines, and current involvement or interest in injury prevention. Committee members reviewed the data and, through a strategic planning exercise, selected five injury focus areas for inclusion into the state plan. Those areas are motor vehicle crashes, suicides, falls, domestic violence/sexual assault and poisonings. Through this same process, the committee then developed prevention/intervention strategies for each of the five injury focus areas and identified potential partners/collaborators for implementation.

IV: Priority Focus Areas and Strategies

A. Motor Vehicle Crashes

Statement of Problem: Motor vehicle crashes are the leading cause of injury death in North Dakota. These figures don't include fatalities due to motorcycle or ATV crashes, pedestrian fatalities, or bicycles fatalities. From 1999 to 2003, motor vehicle crashes (MVCs) accounted for 25.2 percent of all injury-related fatalities. (Figure 4) A total of 446 fatalities were the result of motor vehicle crashes during this time period, an average of 89.2 people per year. In 2003, there were 105 fatalities and 4,817 injuries resulting from 16,552 reported crashes in North Dakota¹.

Based on the 2003 numbers, this equates to:

- One reportable traffic crash every 31.8 minutes
- One person injured in a motor vehicle crash every 1.8 hours
- One person killed in a motor vehicle crash every 3.5 days

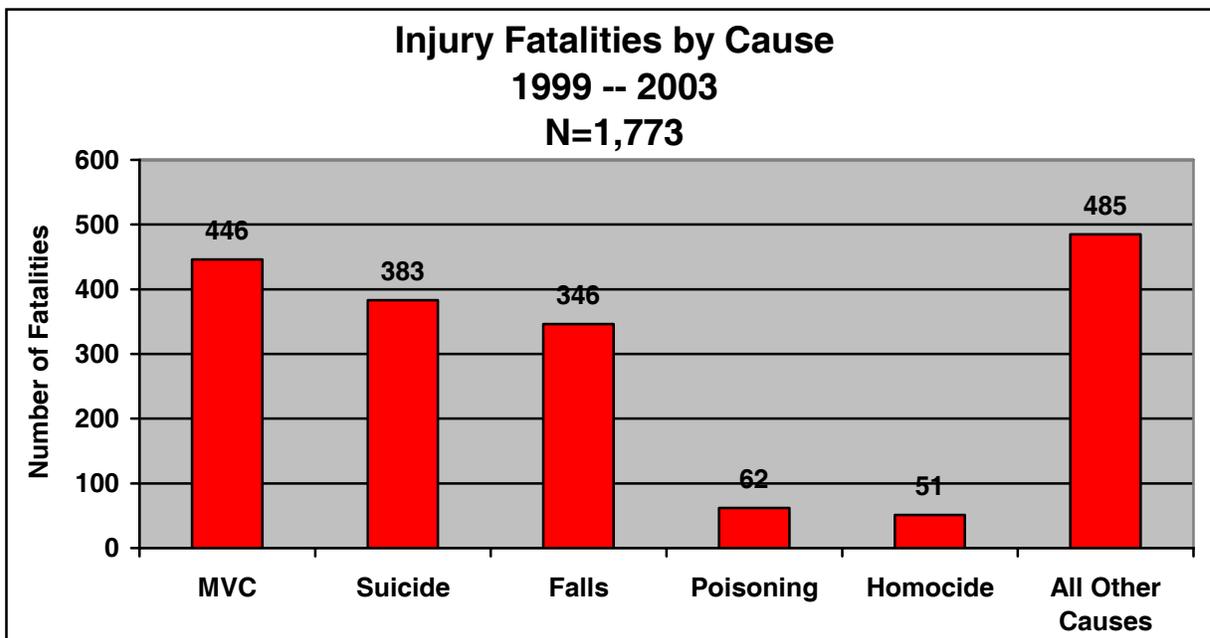


Figure 4. North Dakota Injury Fatalities by Cause, North Dakota Department of Health Division of Vital Records.

North Dakota's MVC death rate was 1.61 per 100 million vehicle miles traveled in 1999; 1.18 in 2000; 1.47 in 2001; 1.37 in 2002; and 1.44 in 2003¹. In comparison, the national MVC death rate dropped from 1.55 per 100 million vehicle miles traveled in 1999 to 1.49 in 2003¹.

It is estimated that North Dakota crashes resulting in either fatality or injury cost \$306,648,300, including, but not limited to, lost wages, fringe benefits, medical expenses including emergency service costs, administrative expenses that include cost of public and private insurance, police and legal costs, motor vehicle damage, damage to property and employer cost for injuries to workers¹. In addition, costs associated with “property damage” crashes added another \$81,920,600 to the estimated loss amounts in 2003¹. The estimated loss for each North Dakota resident is \$605 each year for all types of crashes. Of the 3,165 cases collected through the State Trauma Registry from January 2000 through July 2004*, 620 non-fatal MVC cases were identified. MVCs were the second leading cause of non-fatal injuries identified through the State Trauma Registry, at 19.6 percent of the total trauma cases reported. (Figure 5) It is unclear as to whether this information includes pedestrians. Recreational vehicles include three- and four-wheelers, motorcycles, snowmobiles and the category of other road vehicles, including tractors and motor homes. While these are examples, the category lists are not inclusive.

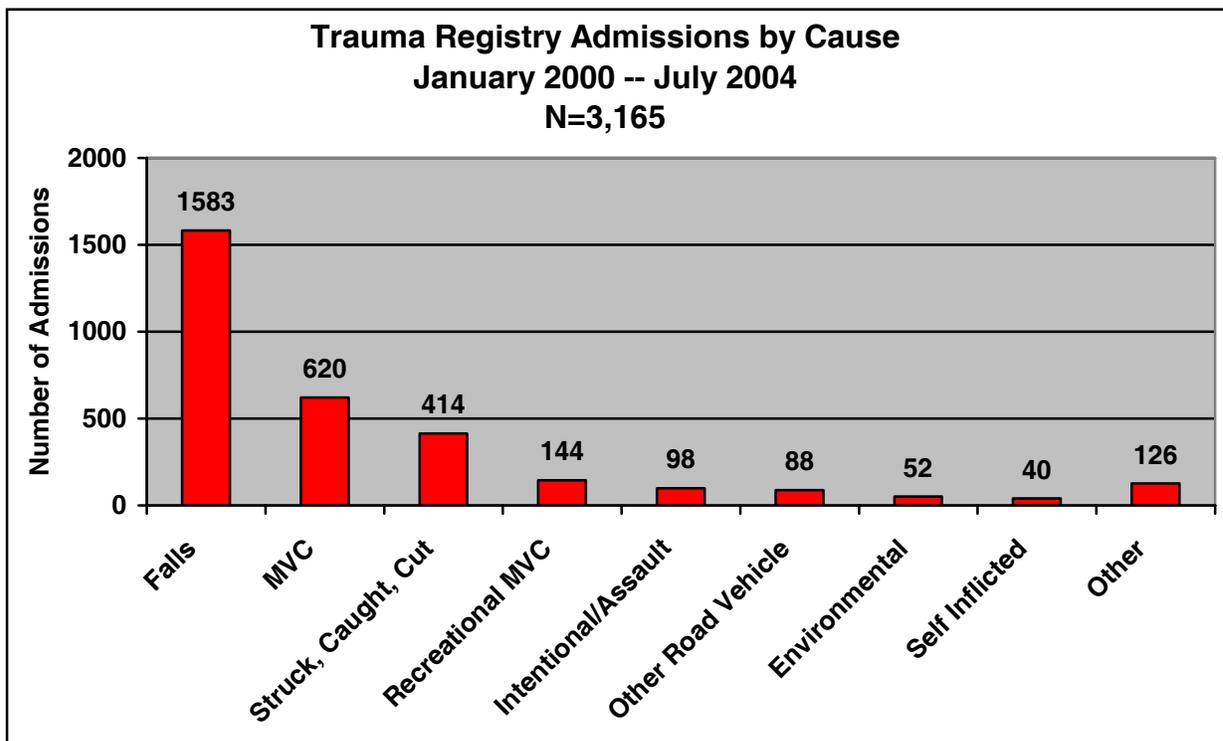


Figure 5. North Dakota Injury Trauma Cases by Cause, North Dakota Trauma Registry.

The EMS runs data also indicates that MVC injury is significant for North Dakota with more than 35 percent of the runs for 1998 through 2000 and for 2002 attributed to motor vehicle crashes. (Figure 6)

*There are limitations on incomplete and variable population ascertainment over this period.

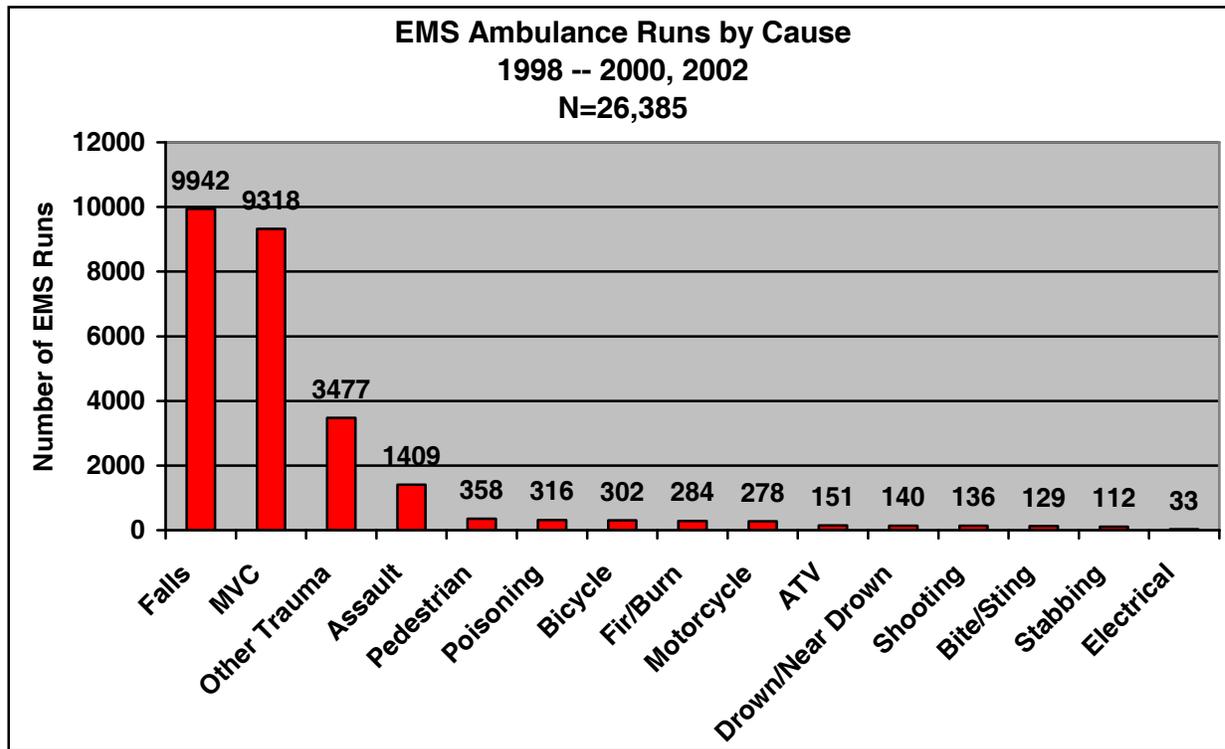


Figure 6. North Dakota Injury EMS Ambulance Runs by Cause, North Dakota Department of Health, Division of Emergency Medical Services.

Contributing Factors

1. Age and Gender

Drivers and passengers between the ages of 20 and 29 are disproportionately represented in the MVC fatalities. These drivers accounted for 111 of the 446, or 24.9 percent (24.9 per 100,000), of all MVC fatalities over the time period, yet only account for 13.9 percent of the population in North Dakota. (Figure 7) At the same time youth, ages 16 to 19 represent 37.41 per 100,000 of the MVC fatalities for the years 1999 through 2003 according to the NDDoH Division of Vital Records. For North Dakotans ages 16 to 29 the risk of dying in a motor vehicle crash between the ages 16 to 29 is greatest than for all other age groups.

Of the 446 fatalities resulting from MVCs, the age groupings most frequently represented were:

Ages 20 to 29	111 fatalities	24.9 percent of total
Ages 10 to 19	80 fatalities	17.9 percent of total
Ages 40 to 49	65 fatalities	14.6 percent of total
Ages 70 to 79	45 fatalities	10.1 percent of total

The age groupings 30 to 39 years of age and 50 to 59 years of age each had 41 fatalities over this time period, while seven children younger than 10 were killed in motor vehicle crashes.

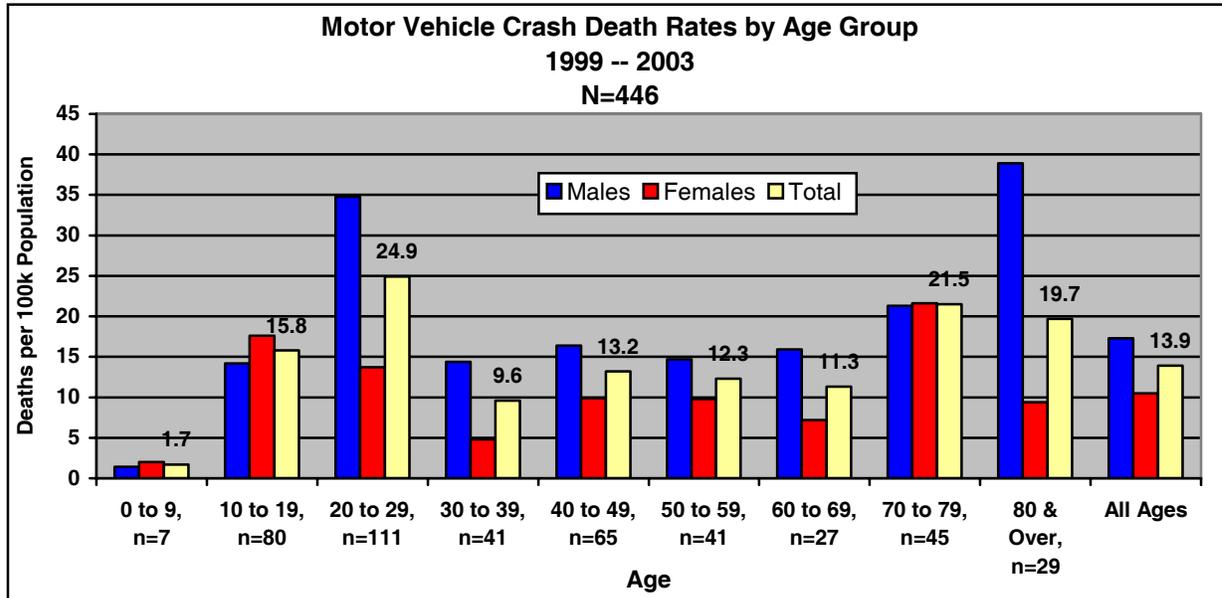


Figure 7. North Dakota MVC Death Rates by Age and Gender, North Dakota Department of Health, Division of Vital Records.

Overall North Dakota’s MVC death rate is 13.9 per 100,000 population. The highest MVC death rate was for the age group 20 to 29 with a rate of 24.9 per 100,000 population, followed by the age group 70 to 79 at 21.5, and the age group 80 and over with a rate of 19.7.

Males accounted for 62 percent (277) and females accounted for 38 percent (169) of the MVC-related fatalities during the time period 1999 through 2003. Males had higher death rates in six of the nine age groups. Overall, males also had a significantly higher MVC death rate per 100,000 population than females: 17.3 versus 10.5. (Figure 8)

<u>Gender</u>	<u>Rate</u>
Male	17.3 per 100,000
Female	10.5 per 100,000

*North Dakota’s population is split 49.9% male and 51.1% female

Figure 8. MVC Death Rates by Gender, North Dakota Department of Health, Division of Vital Records.

These trends are mirrored very closely in the MVC data reported through the trauma registry. The age groups having the largest percentage of all the crash injuries were ages 10 to 19 (25 percent of total crashes) and ages 20 to 29 (19.7 percent of total).

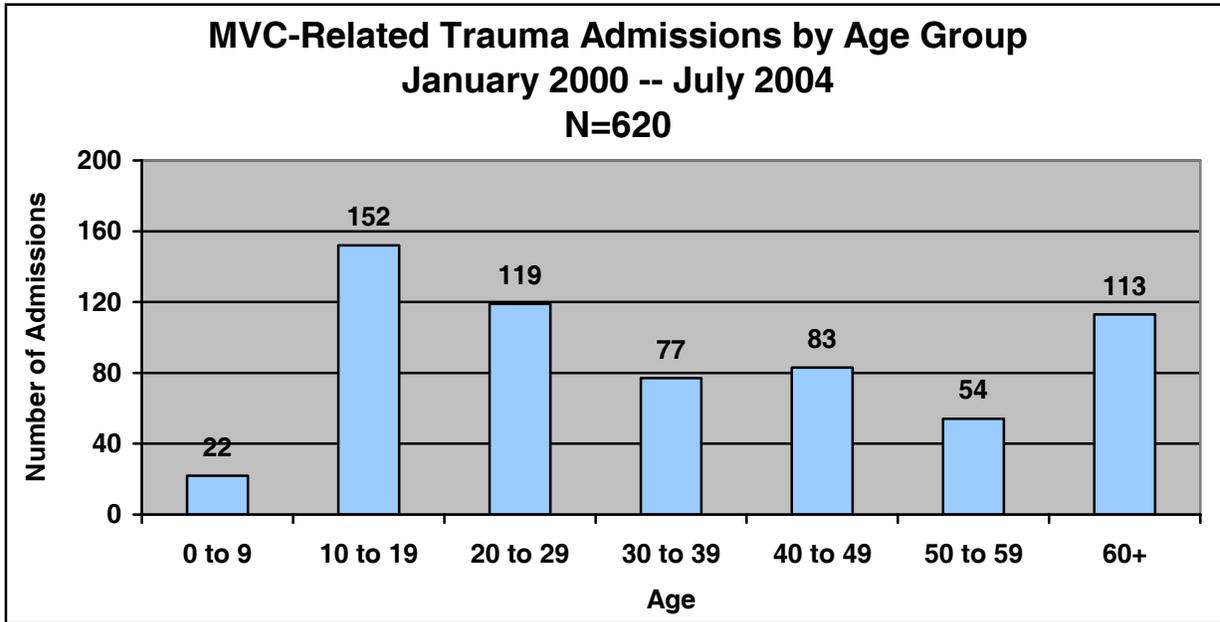


Figure 9. MVC-related Trauma Admissions by Age, North Dakota Trauma Registry.

2. Race

MVC fatalities disproportionately affect American Indians in North Dakota. Despite accounting for only 4.9 percent of the population, American Indians accounted for 17.3 percent of the MVC fatalities from 1999 to 2003. (Figure 10)

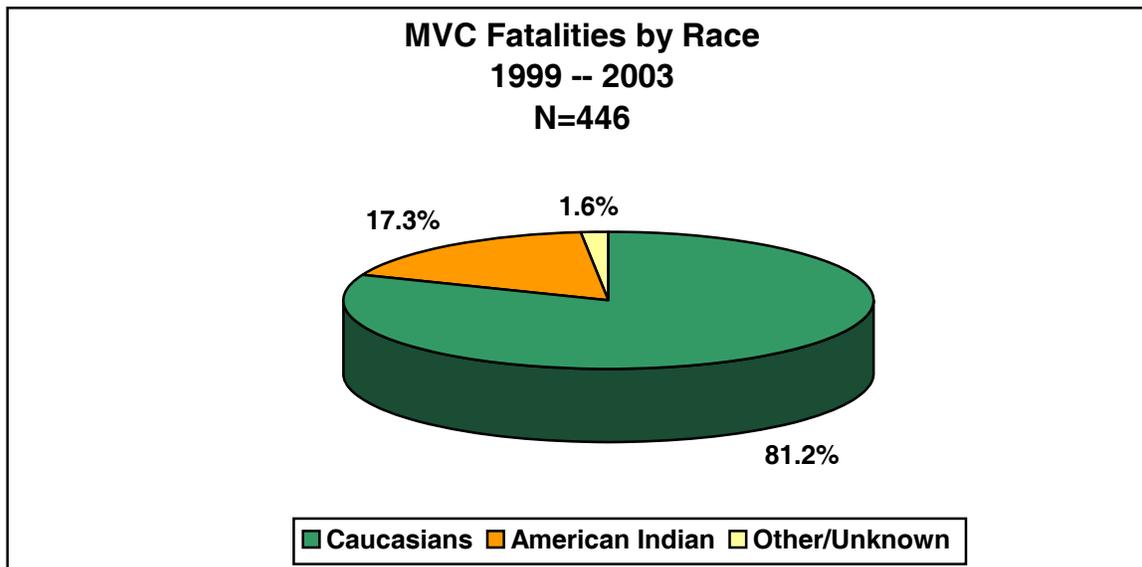


Figure 10. MVC Fatalities by Race, North Dakota Department of Health, Division of Vital Records.

The actual rate per 100,000 population was 49.2 for American Indians in North Dakota, compared to 12.2 for Caucasians. (Figure 11)

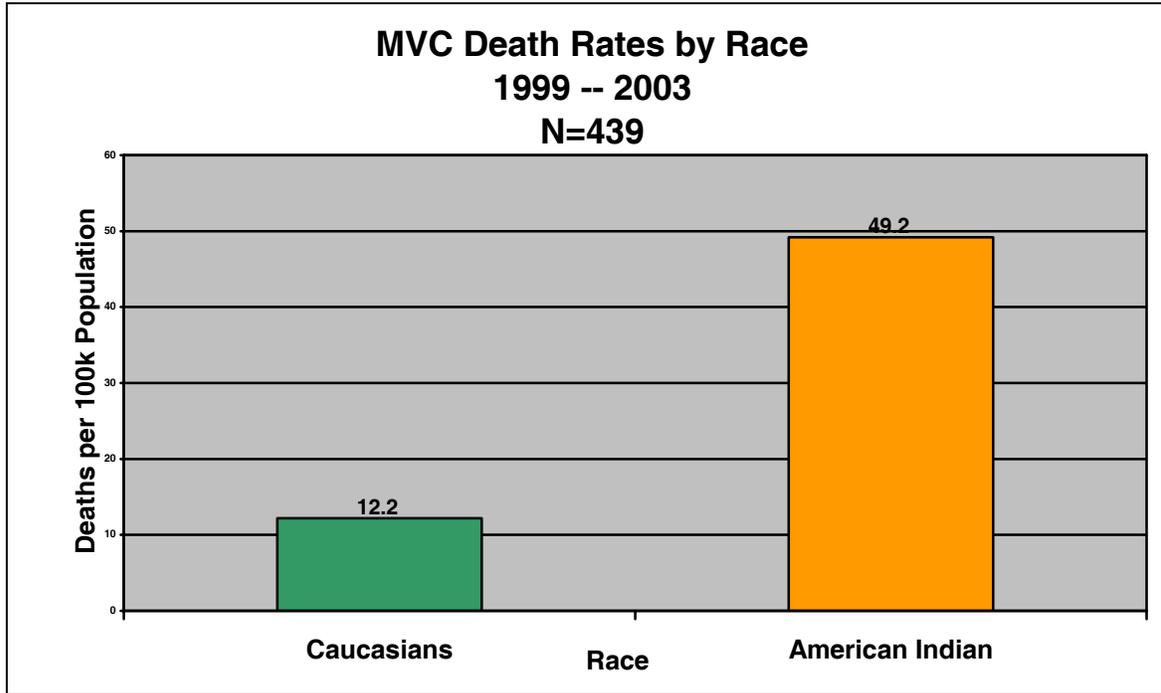


Figure 11. MVC Death Rates by Race, North Dakota Department of Health, Division of Vital Records.

2. Lack of Restraint Use

Restraint use increased every year from 1999 to 2003; increase from just below 50 percent in 1999 to just over 60 percent in 2003¹. However, North Dakota remains lower than other states in percentage of drivers and passengers utilizing restraints. For states reporting data in 2002 (N=48), North Dakota was tied for 43rd lowest in safety belt usage². It is estimated that lap/shoulder safety belts, when used, reduce the risk of fatal injury to front-seat passenger car occupants by 45 percent³. Of the North Dakota fatalities in 2003, restraints were used by only 25.9 percent of the people. If these individuals would have been using seat belts at the same rate as other drivers in North Dakota, an additional 16 to 18 people could have been saved. Increasing the usage to 100 percent could potentially save an additional 35 lives per year.

A step toward the goal of 100 percent usage would be to upgrade North Dakota's seat belt law from secondary to standard/primary enforcement. Under the current secondary enforcement law, motorists may be cited for non-seat belt use only if they are stopped for another motor vehicle violation. It has been estimated that the passage of such laws in other states has increased seat belt usage by 15 percent³. This alone could potentially save eight lives and millions of dollars every year in North Dakota.

Factors that may contribute to the use/non-use of restraints are the type of vehicle. Surveys conducted by the North Dakota Department of Transportation indicate that pickup drivers are less likely to use restraints. Data reflects that pickups/vans/SUVs are involved in a significant

proportion of MVCs. Other factors may include age, gender, and geographic density, as well as speed, which is mostly likely correlated to the previous factors mentioned.

While North Dakota lags behind other states in seat belt use and laws relating to adults, they seem to do a better job with buckling up young children. The state's primary enforcement child passenger safety law requires seat belt or child restraint use for children younger than 18. Observation surveys conducted by the NDDoH Injury Prevention Program in 2004 showed that 97.4 percent of infants were riding in a car seat, 85.4 percent of toddlers ages 1 through 5 were buckled in a car seat or seat belt, and 78.2 percent of children ages 6 to 10 were in a seat belt or child restraint.

According to the National Highway Traffic Safety Administration, national studies reflect approximately an 80 percent incorrect use rate of child safety seats. Many local checkups reflect misuse rates of more than 90 percent. Checkups across North Dakota mirror the national misuse rates.

3. Alcohol Use

The Youth Risk Behavior Survey (YRBS) results reflect that alcohol use by the state's youth continues to be a problem. According to 2003 data, 26.7 percent of students reported that they had driven after drinking at least once in the past 30 days. This compares to 12.1 percent nationwide. Also significant was the difference in percentages of youth stating that in the past 30 days they had ridden with someone who had been drinking – 42.8 percent for North Dakota students and 30.2 percent nationwide.

4. Geographic Density (Rural Versus Urban)

The percentage of all crashes that occurred in urban counties in 2003 was 24 percent, but these four counties comprise 55.3 percent of the population. This compares to rural counties where 76 percent of the fatalities occurred, but which account for only 44.7 percent of the population. This reflects an increase of more than 150 percent from urban to rural counties, 8.5 per 100,000 population compared to 21.2, respectively.

Goal

Reduce the number of fatalities caused by motor vehicle crashes by 10 percent by 2010 by supporting the goals, objectives and initiatives of the North Dakota Department of Transportation, Traffic Safety Division.

Strategies

1. Support enactment of a primary/standard enforcement seat belt law in North Dakota.
2. Continue to promote public awareness and enforcement of North Dakota's child passenger safety law and North Dakota's current seat belt law.

3. Promote correct use of child restraints through car seat distribution programs, car safety seat checkups and public information campaigns. Conduct workshops to increase the network of trained advocates and certified child passenger safety technicians.
4. Support public information and education campaigns such as “Click It or Ticket,” “Do Buckle – Don’t Booze,” seat belt mobilization campaigns, and other efforts to increase the use of seat belts by North Dakotans.
5. Support special efforts to decrease motor vehicle fatality rates in high-risk populations, including American Indians and young drivers – both of which are over-represented in motor vehicle fatality rates.
6. Encourage employers to implement and enforce seat belt policies and to include motor vehicle safety as part of worksite wellness initiatives.
7. Support efforts to reduce the rate of alcohol-related fatalities through enactment and enforcement of laws and administrative rules to reduce impaired driving.
8. Support public education and awareness programs to reduce impaired driving, including teen court, victim impact panels, alcohol beverage server training, saturation patrols, sobriety checkpoints and education campaigns that address drinking and driving.
9. Support efforts to change social norms about underage drinking and general alcohol consumption by North Dakotans.

Collaborators and Partners

North Dakota Department of Transportation, North Dakota Department of Human Services, North Dakota Department of Public Instruction, law enforcement, North Dakota universities, University of North Dakota Center for Rural Health, Healthy North Dakota, insurance companies, public health, North Dakota Safety Council, North Dakota State University Extension Service, 4H, FFA, North Dakota driver and safety educators, Native American tribes and state legislative leaders.

B. Suicides

Statement of Problem: During the time period 1999 through 2003, suicides were the second-leading cause of injury death, accounting for 21.6 percent of all injury fatalities. (Figure 4) In terms of Years of Potential Life Lost (YPLL) from 1999 to 2002, suicide ranked second highest with 9,813 years (based on a life expectancy of 75 years) lost, behind only MVCs among all causes of injury death in North Dakota. This number represents 6.7 percent of all YPLL for all causes of death in North Dakota, including both infectious diseases and injuries⁶.

From 1999 through 2003, a total of 383 North Dakota residents completed suicide, an average of 76.6 people per year. Suicide deaths ranged from a low of 63 in 2000 to a high of 87 in 2002. (Figure 16)

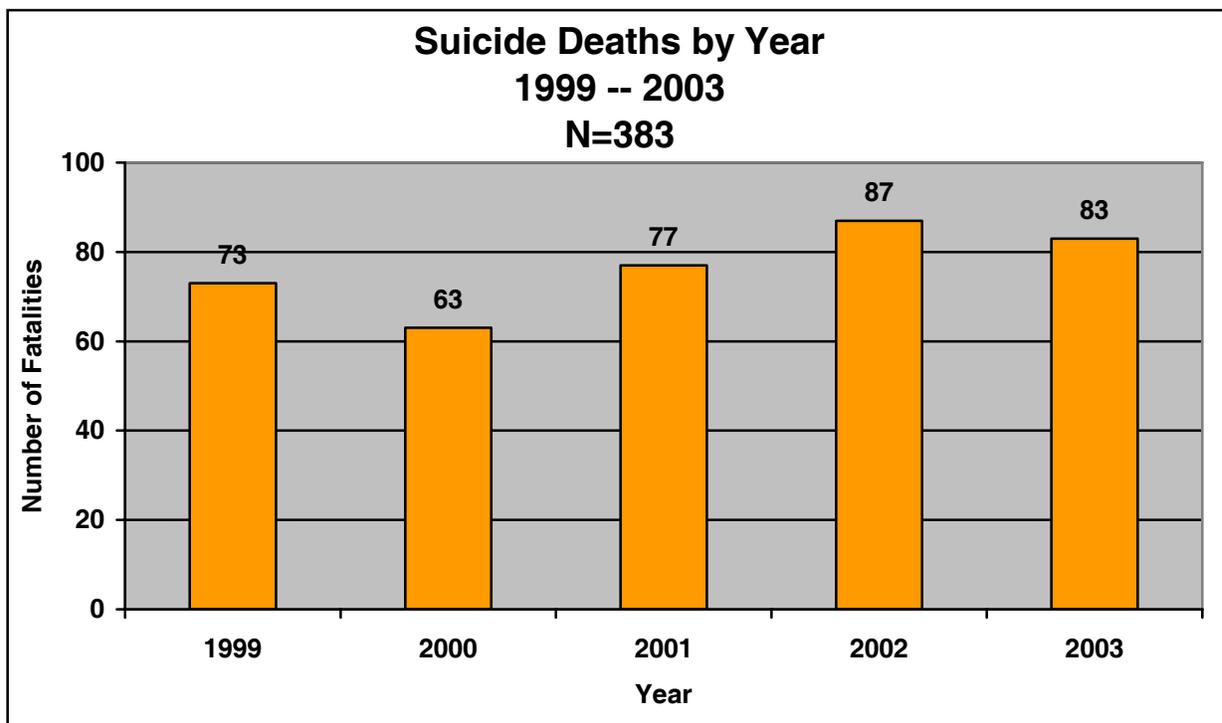


Figure 16. Suicide Deaths by Year, North Dakota Department of Health, Division of Vital Records.

Contributing Factors

1. Age and Gender.

Age groups most frequently completing suicides were ages 40 to 49, 79 cases; ages 30 to 39, 74 cases; and ages 20 to 29, 72 cases.

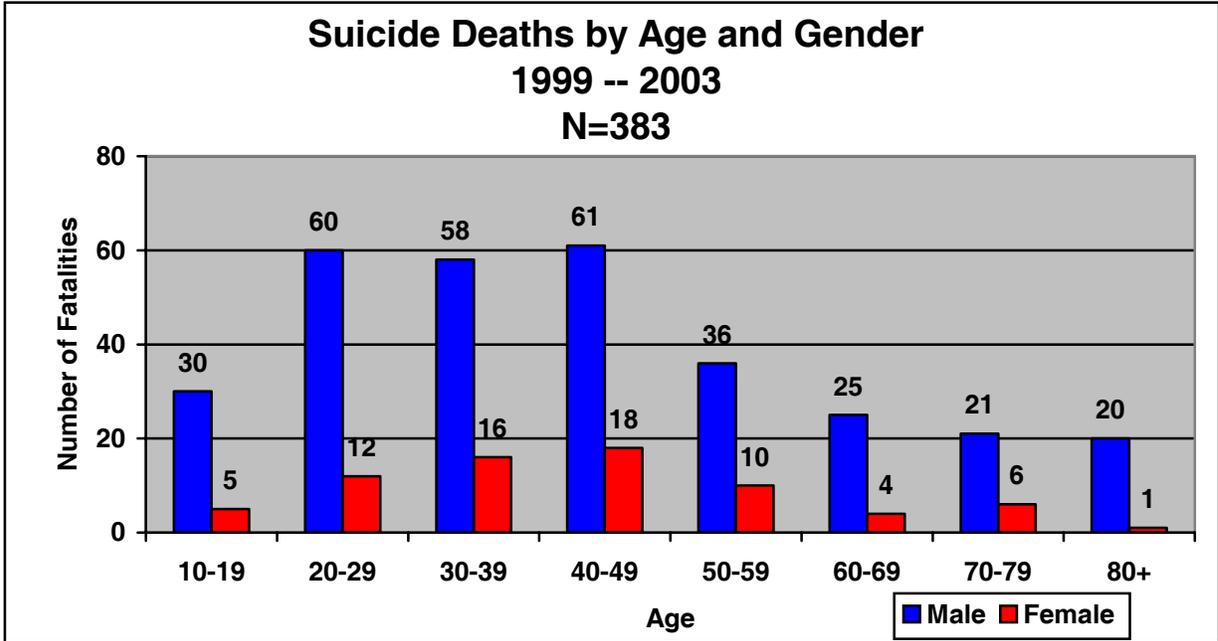


Figure 17. Suicide Deaths by Age and Gender, North Dakota Vital Statistics.

The age group 30 to 39 had the highest death rate of any of the age groups at 20.0 suicide fatalities per 100,000 population, followed by age group 40 to 49 (16.2) and 20 to 29 (14.7). (Figure 18)

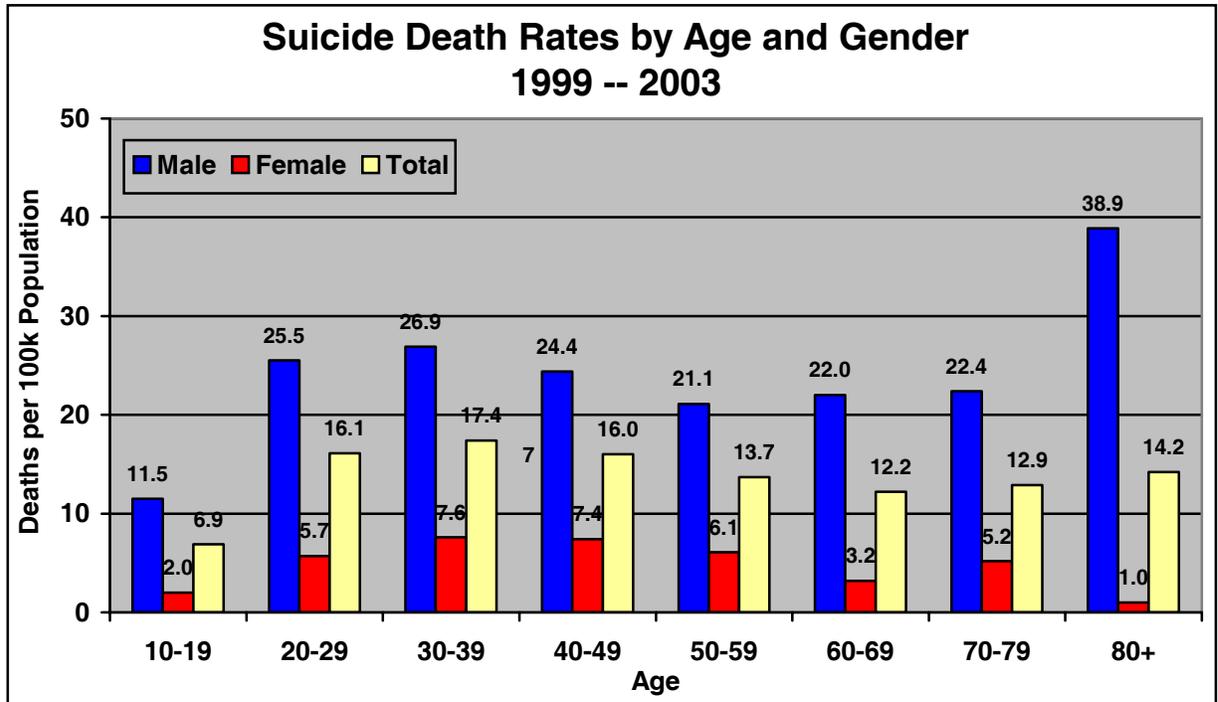


Figure 18. Suicide Death Rates by Age and Gender, North Dakota Department of Health, Division of Vital Records.

Across the nation, females are three times more likely than males to attempt suicide, but males tend to choose a more lethal means. While females are more likely to attempt suicide, they are less likely to succeed than males⁷. In North Dakota, males accounted for 81 percent of the suicides, which was consistent throughout the five-year reporting period. The suicide death rate among males was more than four times higher than females, 18.9 compared to 4.5. (Figure 19) This ratio is consistent with the national ratios for male to female fatalities due to suicide. The rates for North Dakota are consistent with the national statistics in many age groups; however, state rates are higher among males in the 20 to 39 age groups. The death rates are consistent with national rates up to the ages 70 or older, when North Dakota rates are 8 to 10 percent higher.

Suicide Death Rates by Gender 1999 – 2003	
<u>Gender</u>	<u>Rate</u>
Male	18.9 per 100,000
Female	4.5 per 100,000
*North Dakota's population is split 49.9% male and 51.1% female	

Figure 19. Suicide Death Rates by Gender, North Dakota Department of Health, Division of Vital Records.

Following are some of the unique challenges facing each of the different age groups in North Dakota. These challenges are just some of the factors that contribute to individuals attempting suicide. These factors form the basis for the strategies addressing suicide prevention.

- a. 25- to 44-year-olds – substance abuse, long-term mental health issues, and discontinuance of medication while engaging in substance abuse
- b. 45- to 60-year-olds – mid-life crisis issues, economic stress, business/farm/ranch failure, divorce, substance abuse and gambling addiction
- c. 60- year-olds health issues, loss of mobility, social isolation

2. Race.

During the time period 1996 through 2002, 1 percent of all deaths for Caucasians was suicide, while during the same time period, 4 percent of all deaths for American Indians was attributed to suicide. American Indians are over-represented in the completed suicides in North Dakota for 1999 to 2003. Despite accounting for only 4.9 percent of the population, American Indians accounted for 10.7 percent of the completed suicides. The actual rate per 100,000 population was 26.2 for American Indians, compared to 11.3 for Caucasians. (Figure 20)

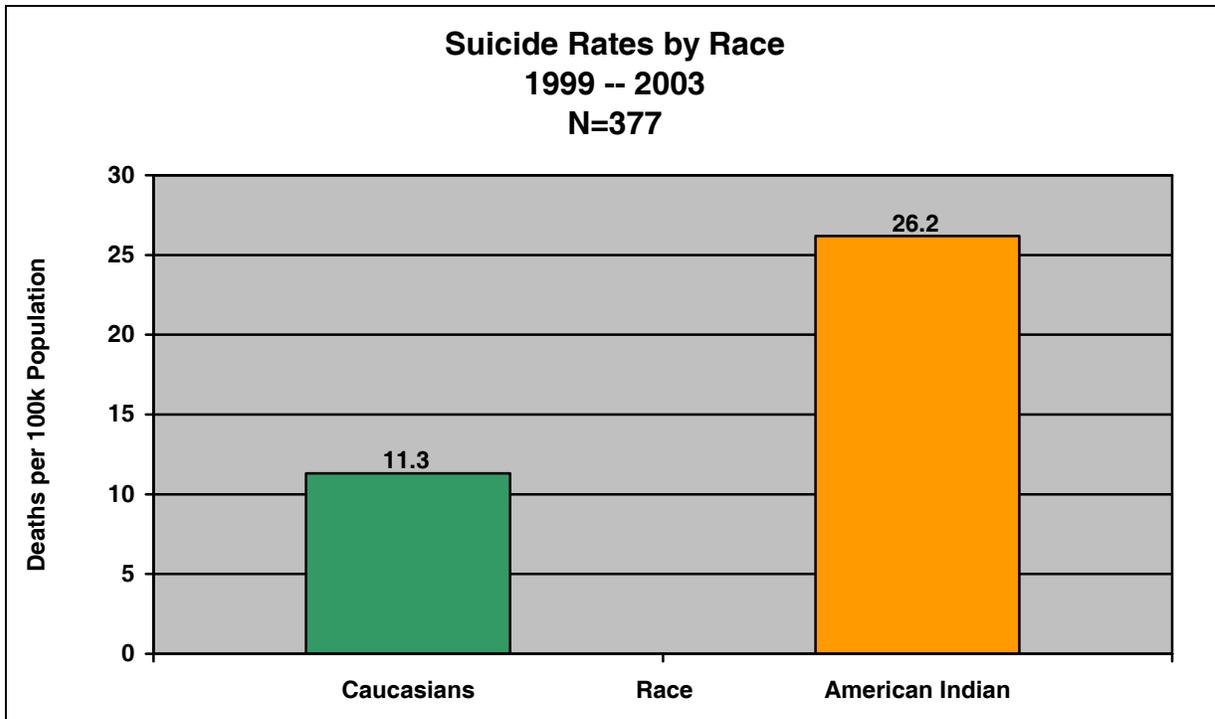


Figure 20. Suicide Rates by Race, North Dakota Department of Health, Division of Vital Records.

3. Access to Firearms.

More than half of the suicides in North Dakota are committed with a firearm (55 percent), followed by hanging (21.7 percent), carbon monoxide (8.6 percent), and drugs (8.3 percent). As mentioned earlier, males nationally tend to use a more lethal method of suicide than females. That trend is also evident in North Dakota, where 64.4 percent of suicides by males are committed with a gun, compared to only 22.2 percent by females using firearms.

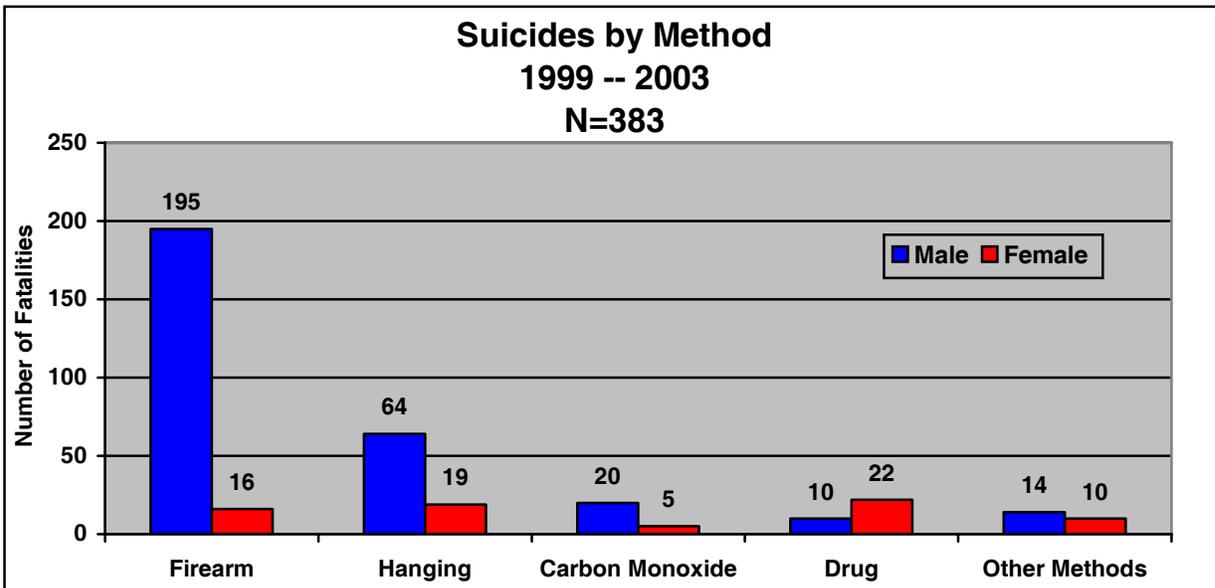


Figure 21. Suicides by Method, North Dakota Department of Health, Division of Vital Records.

4. Emotional Damage.

Overall emotional damage is under-identified as a significant contributor. Emotional damage includes abuse, domestic violence, witness to domestic violence, rape, sexual harassment, sexual orientation, racial discrimination and another suicide in the family. Historical trauma in tribal communities, as it relates to cycles of present day traumas, is a significant pattern.

5. Culture.

North Dakota's cultural history involves ethnic groups that have a strong sense of self-reliance and a corresponding tendency not to seek help. There is a general lack of community awareness and acceptance of the problem of suicide. Many communities have a lack of local capacity and insufficient expertise to guide and plan prevention activities. This could lead to a general dismissal of the problem and of any potential strategies to prevent suicides from occurring.

Trends

The 1999 State Suicide Plan was focused on North Dakota's adolescents because data analysis indicated a primary need in this age group. However, suicide fatalities in North Dakota for 10- to 19-year-olds for years 2000 through 2003 are down 47 percent from the 1990 through 1999 teen suicide fatalities per year averages⁷. Three of the four North Dakota Youth Risk Behavior Survey suicide questions that are monitored as markers of suicides are down 29 percent, as well. With the success of the plan in these targeted areas, North Dakota's Suicide Prevention Task Force is re-evaluating its focus and is in the process of updating the state plan to address suicide prevention for all ages.

Goal

Reduce suicides by 10 percent by 2010 by supporting the goals and strategies outlined in the 2005 Suicide Prevention Plan and in the National Strategy for Suicide Prevention: Goals and Objectives for Action.

Strategies

1. Dedicate sufficient personnel and fiscal resources to address statewide suicide prevention efforts over a structured and long-term basis.
2. Promote awareness that suicide is a public health problem and that suicides are preventable.
3. Increase education and public awareness to reduce the stigma associated with mental illness, substance abuse and suicide and with seeking help for such problems.
4. Reduce the danger and harm of suicidal behavior through early identification of at-risk individuals through gatekeeper training programs, use of screening tools and awareness of suicide warning signals.

5. Increase the availability of treatment services for individuals who have attempted suicide or who are exhibiting high-risk behaviors.
6. Develop a statewide response team to respond to prevent suicide clusters and reduce the suicide-contagion effect.
7. Promote individual assets and resiliency through mentoring, identification of protective factors and relationship-building programs.
8. Promote efforts to reduce access to lethal means and methods of suicide, including educational programs about appropriate storage and locking of firearms, safe ways to store and dispense medications, support for technological design of ignitions that shut off in response to lethal levels of carbon monoxide, etc.

Collaborators and Partners

Mental Health Association in North Dakota, Suicide Prevention Task Force, mental health professionals, Human Services centers, faith community, North Dakota Department of Public Instruction, parish nurses, North Dakota Council on Abused Women's Services/Coalition Against Sexual Assault in North Dakota, youth groups, American Indian communities, local public health, medical providers.

C. Falls

Statement of Problem: During the time period 1999 through 2003, falls were the third leading cause of injury death behind motor vehicle crashes and suicides, accounting for 19.5 percent of all injury fatalities. (Figure 4) According to the state's trauma registry, falls were the leading cause of trauma admissions during the time period from January 2000 through July 2004. (Figure 5) Falls were also the leading cause of Emergency Medical Services runs across the state for the time period 1998 through 2002 (2001 data is not available). (Figure 6) For 1999 to 2003, this equates to:

- One person requiring an ambulance run for a fall-related event every 4.4 hours
- One person requiring an admission for a fall related event every 1.2 days
- One person killed by a fall every 5.3 days

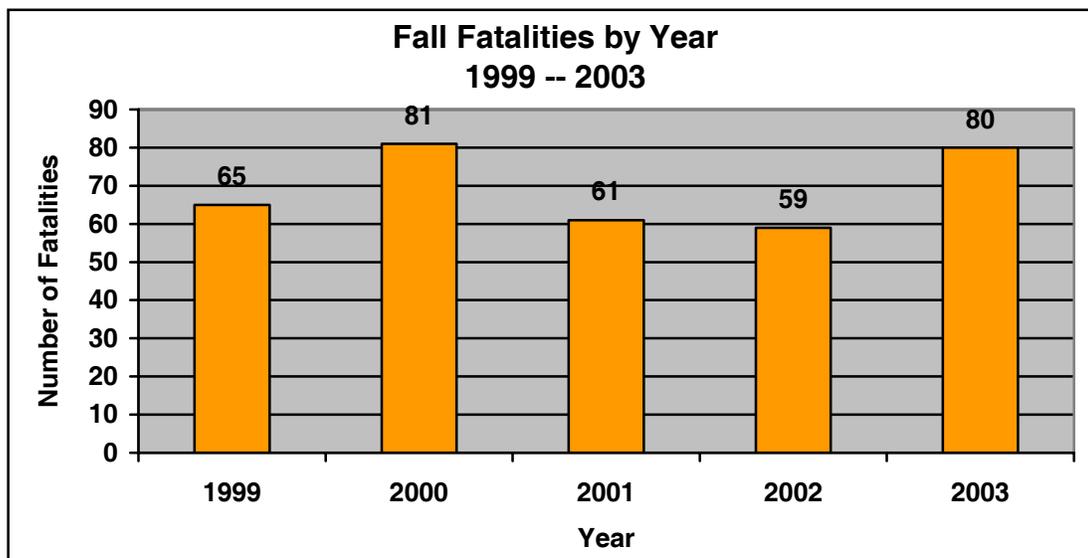


Figure 12. Fall Fatalities by Year, North Dakota Department of Health, Division of Vital Records.

A total of 346 North Dakota residents died due to falls from 1999 through 2003, an average of 69.2 people per year. Fall fatalities ranged from a low of 59 in 2002 to a high of 81 in 2000, with no discernable trend during the time period. (Figure 12) The yearly fatality rate for the period was 10.8 fall-related deaths per 100,000 population. According to the CDC's WISQARS™ (Web-based Injury Statistics Query and Reporting System) website, for the time period 1999 to 2002, North Dakota ranked 12th in rates of fatalities due to falls. The age-adjusted rate for North Dakota was 6.8 deaths per 100,000 population, compared to 5.4 deaths per 100,000 population for the nation.

In 1994, fall-related medical expenses cost Americans more than \$20 billion each year, according to estimates from the U.S. Centers for Disease Control and Prevention. Projections show these expenses will climb to more than \$32 billion over the next 20 years. Our already strapped Medicare and Medicaid systems will be hard-pressed to meet these new costs.

Contributing Factors

1. Genders and Age.

Women older than 60 are the most frequently represented population for fall-related injuries and fatalities. Age complicates recovery, contributing to the development of secondary health problems, as well as increases the likelihood of falling and the severity of the injury.

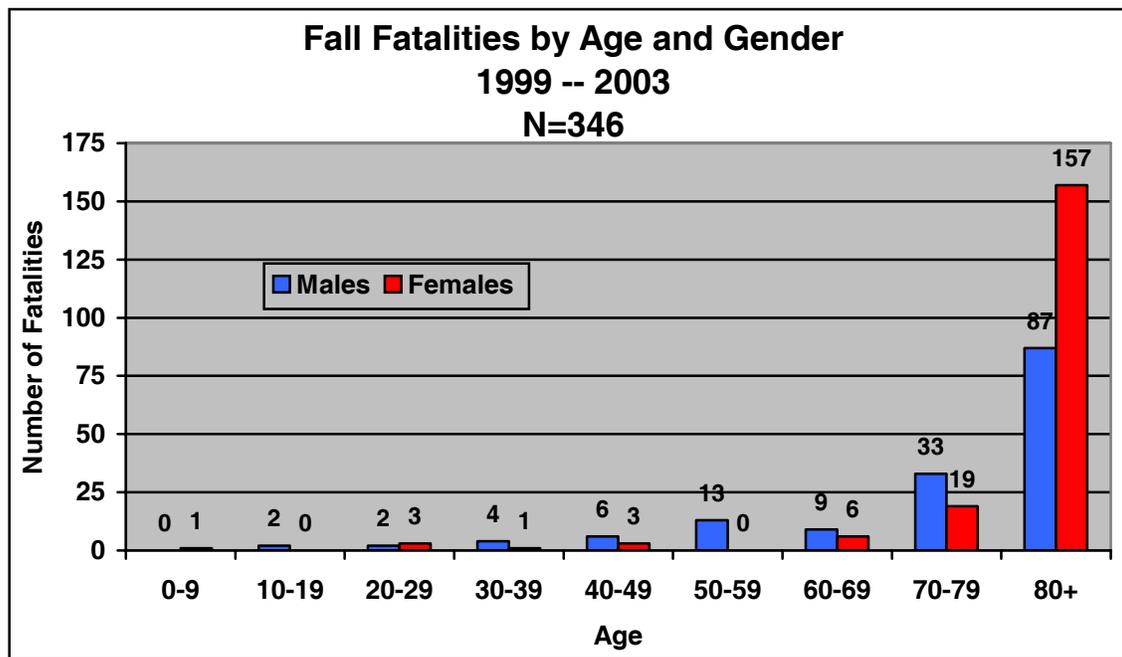


Figure 13. Fall Fatalities by Age and Gender, North Dakota Department of Health, Division of Vital Records.

Elderly North Dakotans age 80 and older accounted for 70 percent of fall-related fatalities, and age 60 and older accounted for 90 percent of fall-related fatalities. (Figure 13) While the overall fall-related death rate per 100,000 population for this time period was 10.8, the death rate for elderly North Dakotans was disproportionate. Individuals age 80 and older had a death rate of 165.5 (per 100,000), compared to a death rate of 15.0 for an individual age 60 to 79 and a rate of 1.3 for an individual younger than 60. (Figure 14) For the years 1999 through 2002 the fall-related death rate per 100,000 for North Dakotans who were older than 85 was considerably higher at 180.7 than those of the same age nationally at 119.0.

Overall, females accounted for 55 percent (190/346) of all fatalities attributable to falls, and, in the age group 80 and older, females accounted for 64.3 percent of the fatalities. However, the death rates among males for all ages are higher than that of females. In North Dakota as the population ages, the differences in gender distributions between males and females become quite profound. For example, there are 19,210 females age 80 and older compared to only 10,282 males, which offsets the fact that females have almost double the number of fatalities in this age category.

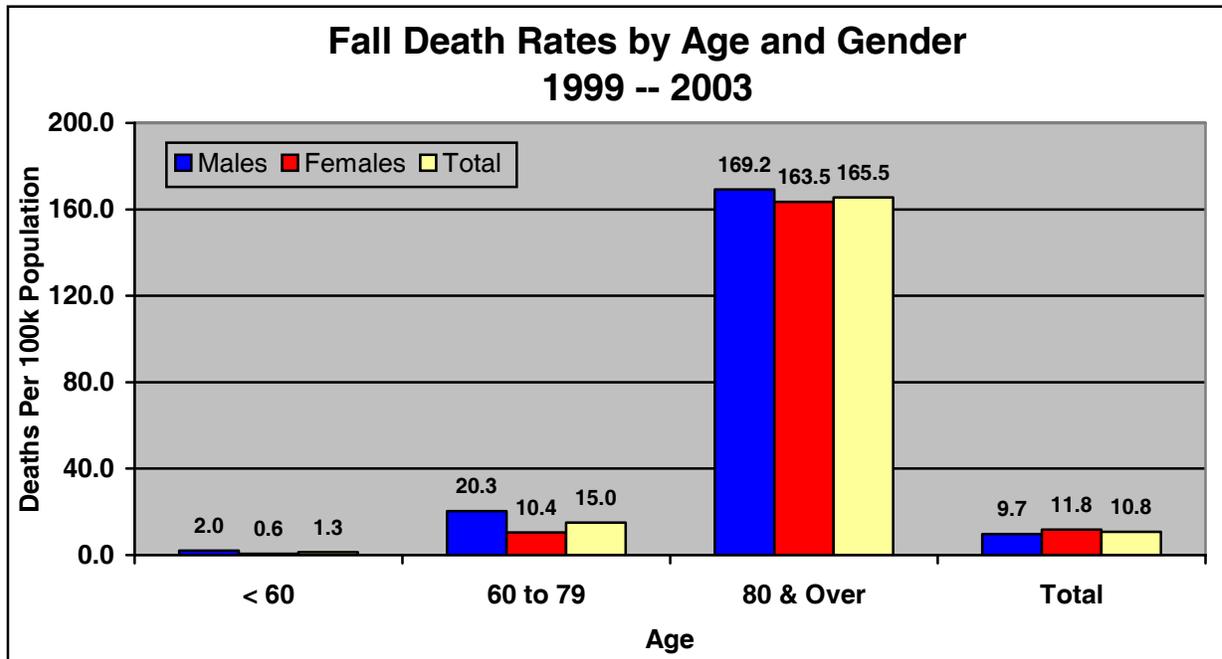


Figure 14. Fall Death Rates by Age and Gender, North Dakota Department of Health, Division of Vital Records.

Of the 3,165 cases collected through the State Trauma Registry from January 2000 through July 2004, 1,583 (50 percent) were the result of falls. Falls were by far the most represented category in the data, resulting in twice as many trauma admissions as the next highest category, which was MVCs, with 620 admissions. While all age groups were represented in the fall-related trauma data, individuals age 60 and older comprised 66 percent of the trauma fall cases, and females accounted for 58 percent of the fall-related trauma cases.

Of the 26,385 EMS injury-related ambulance run reports completed by ambulance services across the state for the time period 1998 through 2002 (2001 data is not available), 9,942 (38 percent) of the ambulance runs were initiated due to fall-related injuries. That makes it the leading cause of injury-related ambulance runs in North Dakota for this time period.

The EMS runs data exhibits the same trends as the other two data sources in regard to age and gender factors. The age group 60 and over accounted for 68 percent (6,776) of all the fall-related runs, and females were involved in 61 percent (6,101) of the fall-related runs.

2. Health status.

Reduced strength, inactivity, lack of adequate nutrition, frailty and other conditions associated with age increases the risk for falls and complicates recovery.

3. Management of Prescription Medication.

Mismanagement of medication increases the risk for falls.

4. Alcohol.

Misuse of alcohol, particularly in conjunction with medication, increases the risk for falls.

5. Living Environment.

Cluttered rooms, stairs, floor coverings, lack of hand rails, poor lighting and other home hazards result in increased risk for falls.

6. Outside Environment.

Steps, slippery surfaces, cluttered yards and other hazards result in increased risk for falls.

Trends

North Dakota has an aging population. Year 2000 census data indicates 18.5 percent of the state's population is age 60 and older, and 2.3 percent of the population is age 85 and older. Even though surveys indicate more adults (ages 45 and above) overwhelmingly want to stay in their current residence as long as possible and prefer to have needed care given in their home, more and more North Dakotans are being placed outside of their homes in resident care centers. This is reflected in the fact that North Dakota has one of the nation's highest nursing home bed to population ratios. The prevalence for falls in the state's nursing homes is 18.0 percent (measured as a percentage of resident center population), which compares to 13.2 percent for the nation⁴. This number actually may be low due to under-reporting of falls. Of all fatalities related to falls from 1999 to 2003, 150, or 43.4 percent, occurred in residential institutions, which includes nursing homes. (Figure 15)

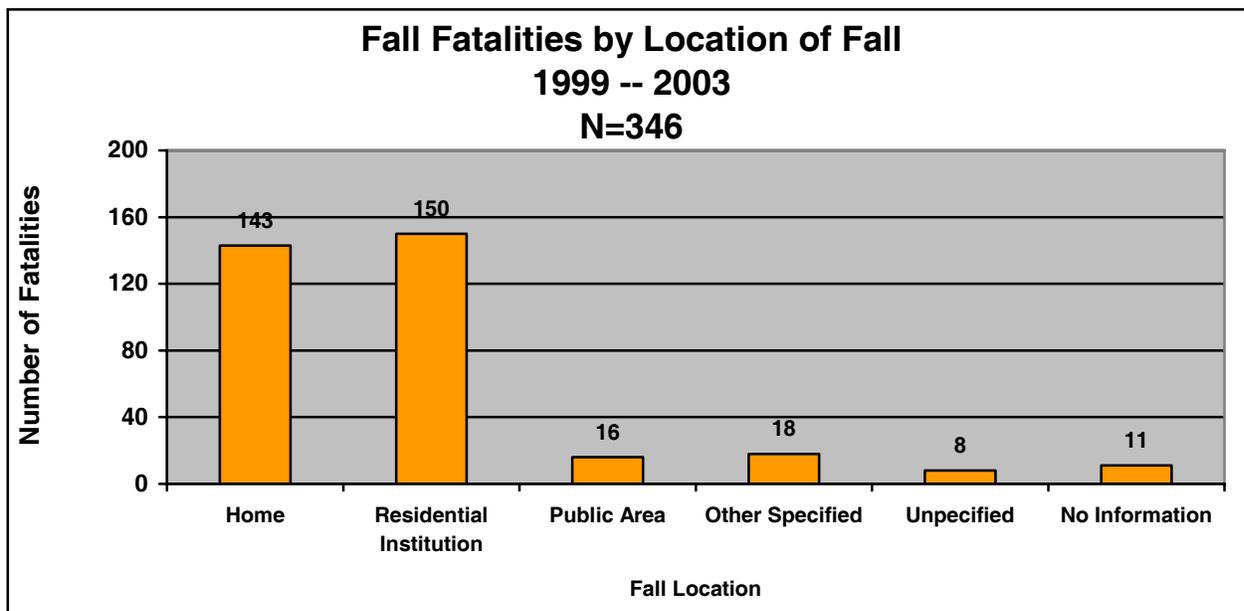


Figure 15. Fall Fatalities by Location of Fall, North Dakota Department of Health, Division of Vital Records.

This is slightly higher than the 143, or 41.3 percent, who died as a result of a fall occurring in the home. Nationally, it is estimated that as many as 75 percent of nursing home residents fall annually, twice the rate of seniors living in the community⁵.

Additionally, national studies investigating falls in nursing homes have found that:

- Patients often experience multiple falls: 2.6 falls per person per year on average⁵.
- About 35 percent of fall injuries occur among non-ambulatory residents⁵.
- About 20 percent of all fall-related deaths among older adults occur among the 5 percent who live in nursing homes⁵.

The future increases in nursing home populations will lead to a substantial increase in the number of falls unless the prevalence of falls is decreased.

Goal

Reduce the number of fatalities caused by falls by 10 percent by 2010

Strategy

1. Education

- a. Campaign on recognizing and reducing fall hazards in the home with emphasis on elderly population.
- b. Campaign on reducing fall hazards outside of the home (yard, shops, work areas) with emphasis on elderly population.
- c. Initiative to reduce falls in the care setting.
- d. Campaign on improving health in senior citizens.

Collaborators and Partners

North Dakota State University Extension Service, insurance companies, North Dakota Farm Bureau, NDAARP, public health, North Dakota Department of Human Services Aging Services, IPAT, Long Term Care Association, fitness centers, Healthy North Dakota, North Dakota Association of Pharmacists

D. Poisonings

Statement of Problem: During calendar year 2003, the Hennepin County Regional Poison Control Center (serving as North Dakota's poison center) reported handling 5,263 calls from North Dakotans regarding poisonings. Of these calls, 70 percent (3,671) were determined to be confirmed human exposure cases; 29 percent (1,516) were information/non-exposure cases; and approximately 1 percent (76) were confirmed animal exposure cases. (Figure 22.) This means that in 2003, there was a confirmed human exposure call every 2.4 hours.

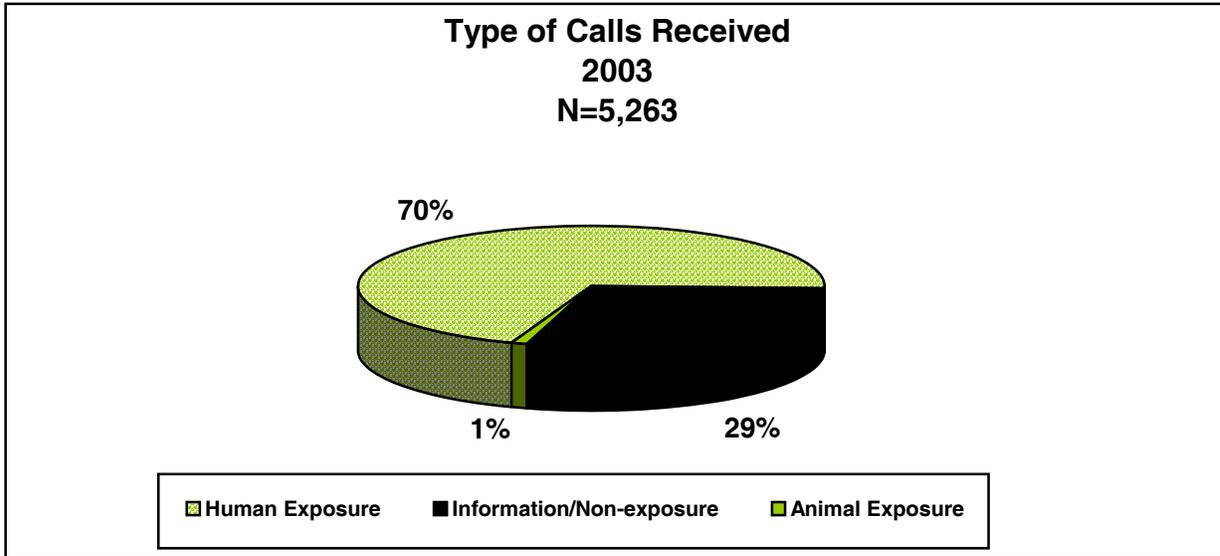


Figure 22. Type of Calls Received, Hennepin County Regional Poison Control Center

Contributing Factors

1. Age.

Children are curious and also have the tendency to put things into their mouths. More than 62 percent of human exposure cases involve children younger than 6, and ingestion is the leading route of exposure. (Figure 23)

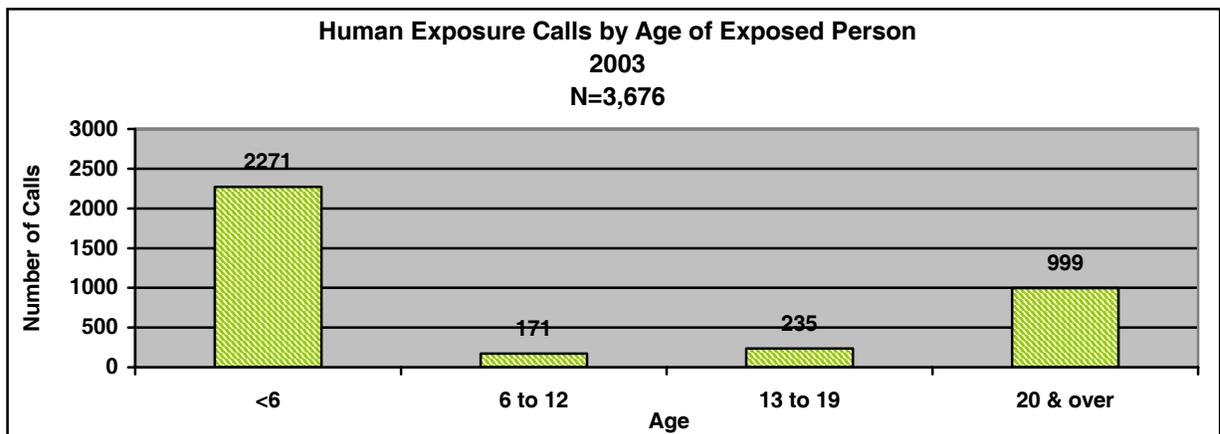


Figure 23. Human Exposure Calls by Age of Exposed Person, Hennepin County Regional Poison Control Center.

2. Home Setting.

Children spend much of their time in the home where there is access to potentially toxic substances (chemicals, cleaning supplies, etc), cosmetics and medication (both over-the-counter and prescription). In tracking the origin of human exposure calls, 78 percent (2,855) of the calls originated from the caller’s residence, which doesn’t necessarily imply the site of poisoning. Health facilities frequently call poison centers for protocol, and this was the origin for 13.8 percent (507) of the calls. In North Dakota, we compare to the nation with numbers of exposures occurring in the home as well as calls from a health facility regarding poison protocol.

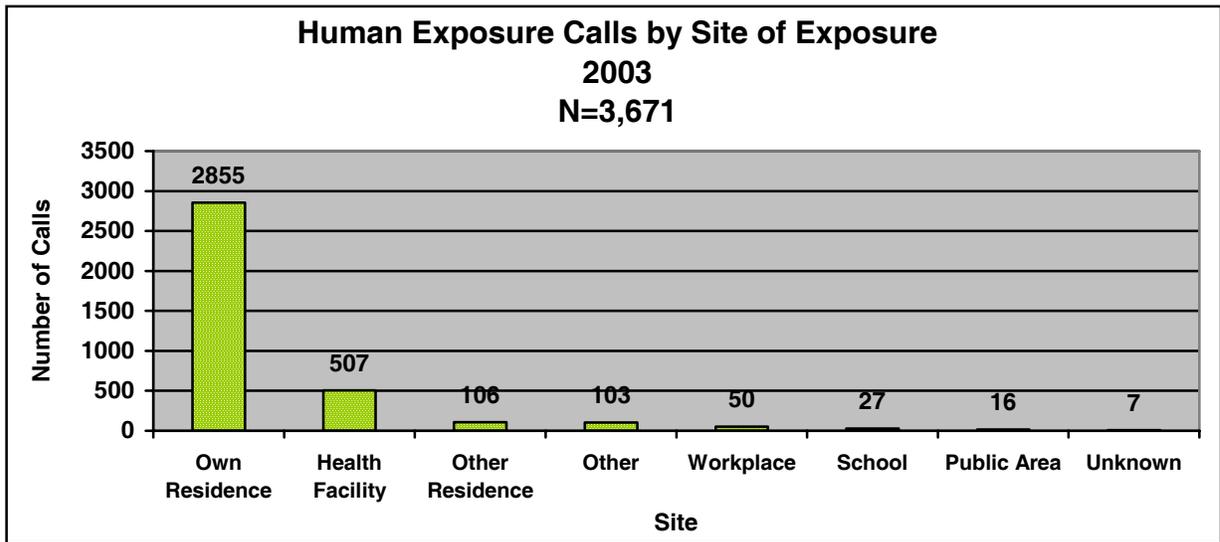


Figure 24. Human Exposure Calls by Site of Exposure, Hennepin County Regional Poison Control Center.

Trends

Ingestion, at 87 percent of the human exposure cases, was the most common route of exposure to a substance, which corresponds with the fact that 62 percent of the human exposure calls are for children younger than 6. (Figure 25) It is important to note that dermal exposure (i.e. poison ivy or oak poisoning) was the next highest among all ages, especially among children younger than 6 and adults older than 20. Inhalation for the older than 20 age group was also notable.

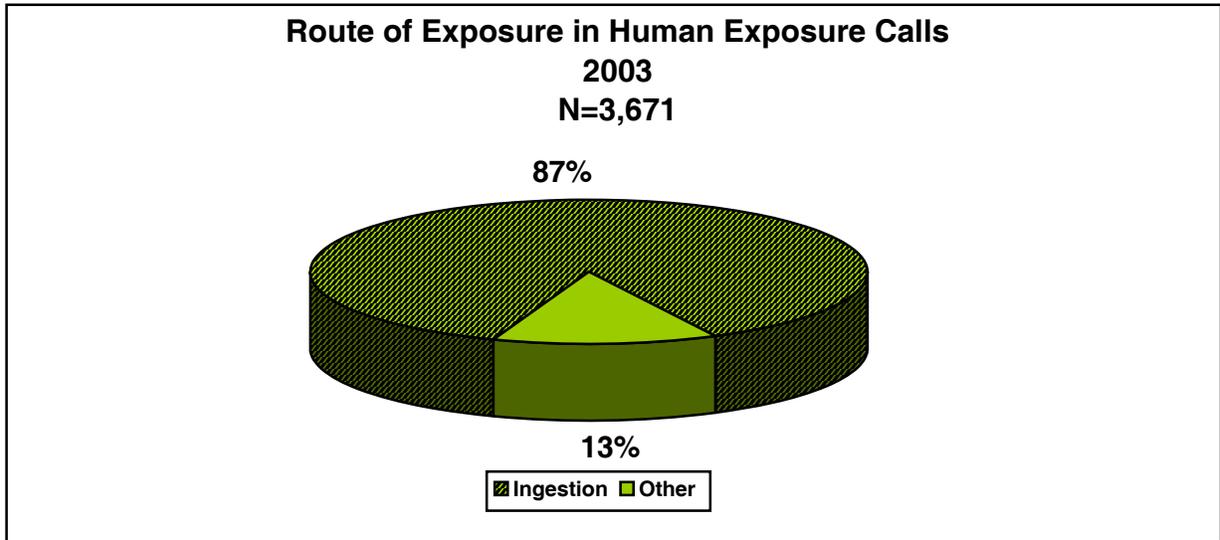


Figure 25. Route of Exposure in Human Exposure Calls, Hennepin County Regional Poison Control Center.

When the substance or agent was identified, non-pharmaceutical substances were involved in 57 percent of the human exposure cases, and pharmaceutical substances were involved in 43 percent. (Figure 26)

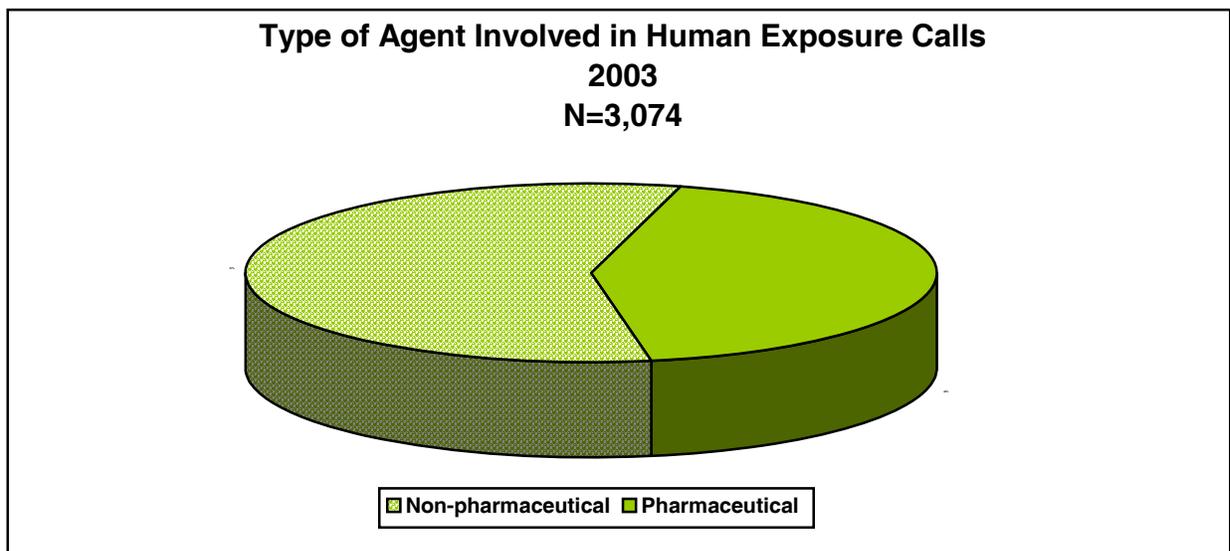


Figure 26. Type of Agent Involved in Human Exposure Calls, Hennepin County Regional Poison Control Center.

Calls for both human and animal exposure were well distributed throughout the year, with peak call volume occurring during the months of June, July, and August. (Figure 27) These months correspond to summer vacation from school when children spend more time at home where the large majority of poisoning cases occur. These months also afford them more time outdoors, where additional poisoning dangers are present.

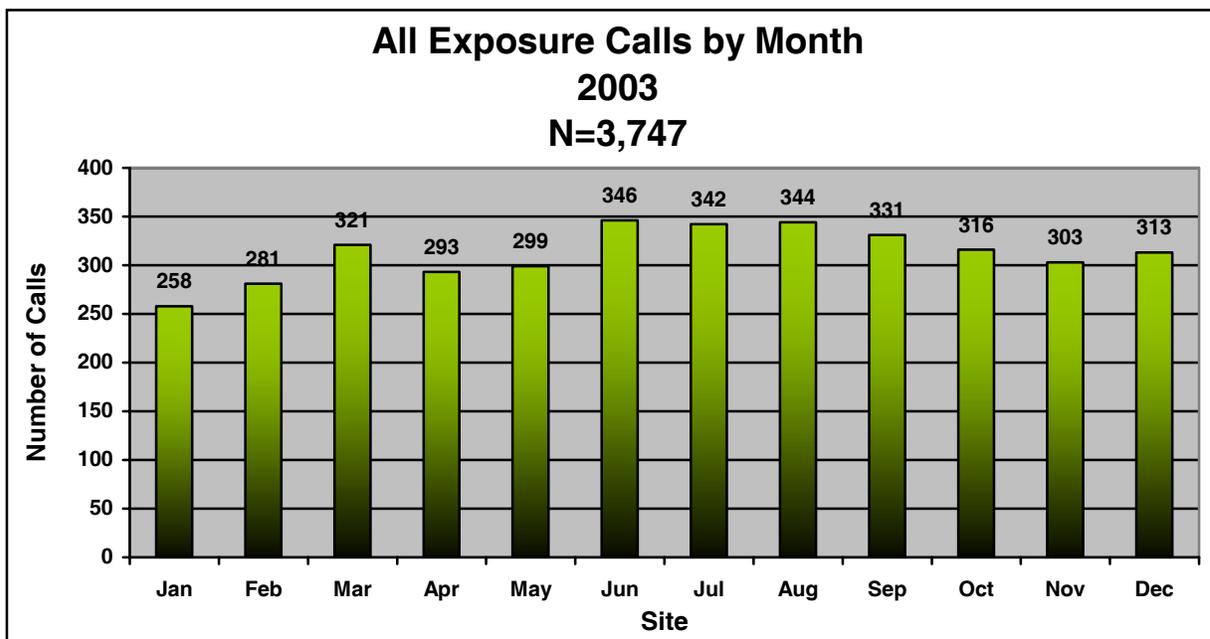


Figure 27. All Exposure Calls by Month, Hennepin County Regional Poison Control Center.

Summary

Young children younger than 6 continue to comprise a significant portion of exposure cases reported to the state’s poison center. The home setting remains the most frequently represented site from which calls to the poison hotline originated, and ingestion continues by far to be the most common route of exposure.

Goal

Reduce poisonings reported to North Dakota’s poison center by 10 percent by 2010.

Strategies

1. Continue to financially support the services of a certified regional poison center so that North Dakota consumers and health-care providers will have access to appropriate poison consultation and prevention services at all times.
2. Work with the regional poison control center to review and analyze call data to develop educational campaigns targeted to populations at risk for poisoning, including information about intentional poisonings and their relationship to suicide attempts.

3. Prepare reports and develop educational materials from the call data and disseminate to stakeholders to assist them in conducting community-based poison control activities.
4. Develop educational campaigns targeting parents and caregivers with emphasis on safe storage of prescription and over-the-counter medications, cleaning products, alcohol and other poisonous products in homes, garages, farm buildings, shops, etc.
5. Conduct educational campaigns targeting senior citizens on issues relating to medication storage, dosage, label reading, expiration dates and disposal.
6. Continue to promote use of the national poison control phone number.
7. Promote use of the www.ndpoison.org website for consumers and health-care providers as a means of providing up-to-date educational information about poison prevention.
8. Support the efforts of the U.S. Consumer Product Safety Commission, the American Association of Poison Control Centers and other national agencies in monitoring and mandating poisonous substance labeling, packaging and dispensing requirements.

Collaborators and Partners

Child care centers, WIC Program, Head Start, Children and Family Services Programs, senior citizen centers, North Dakota State University Extension Service, 4H, FFA, insurance companies, state medical and pharmacy associations, pediatricians, North Dakota Poison Center, and local public health.

E. Domestic Violence and Sexual Assault

Domestic Violence

Statement of Problem: From 1999 through 2003, a total of 19,473 new (unduplicated for calendar year) victims of domestic violence received services through the North Dakota Council on Abused Women's Services/Coalition Against Sexual Assault in North Dakota (NDCAWS/CASAND). These services were provided through NDCAWS's 21 domestic violence and sexual assault agencies across the state. The number of new victims ranged from a low of 3,597 in 1999 to a high of 4,197 in 2002. (Figure 28)

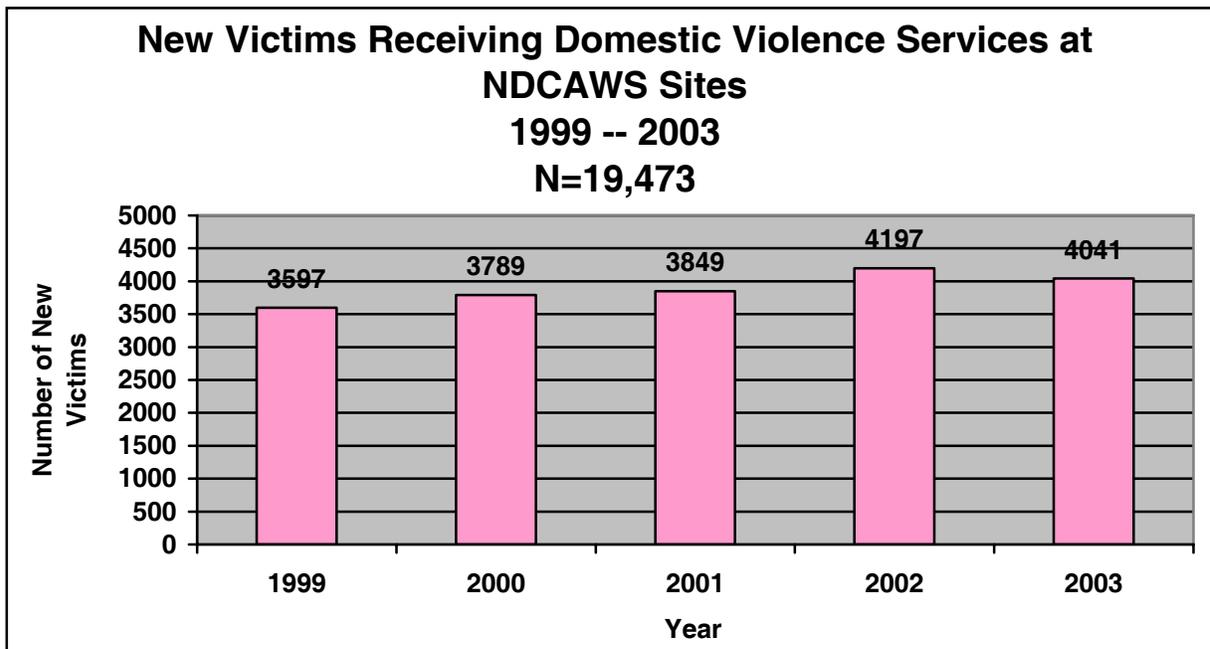


Figure 28. New Victims Receiving Domestic Violence Services at NDCAWS Sites, North Dakota Council on Abused Women's Services.

Contributing Factors

1. Age and Gender.

Domestic violence offenders are predominately male, while victims are mainly female. Age groups most frequently represented were ages 30 to 44, 8,003 cases, 41 percent; ages 18 to 29, 7,357 cases, 38 percent; and ages 45 to 64, 2,322 cases, 12 percent. (Figure 29)

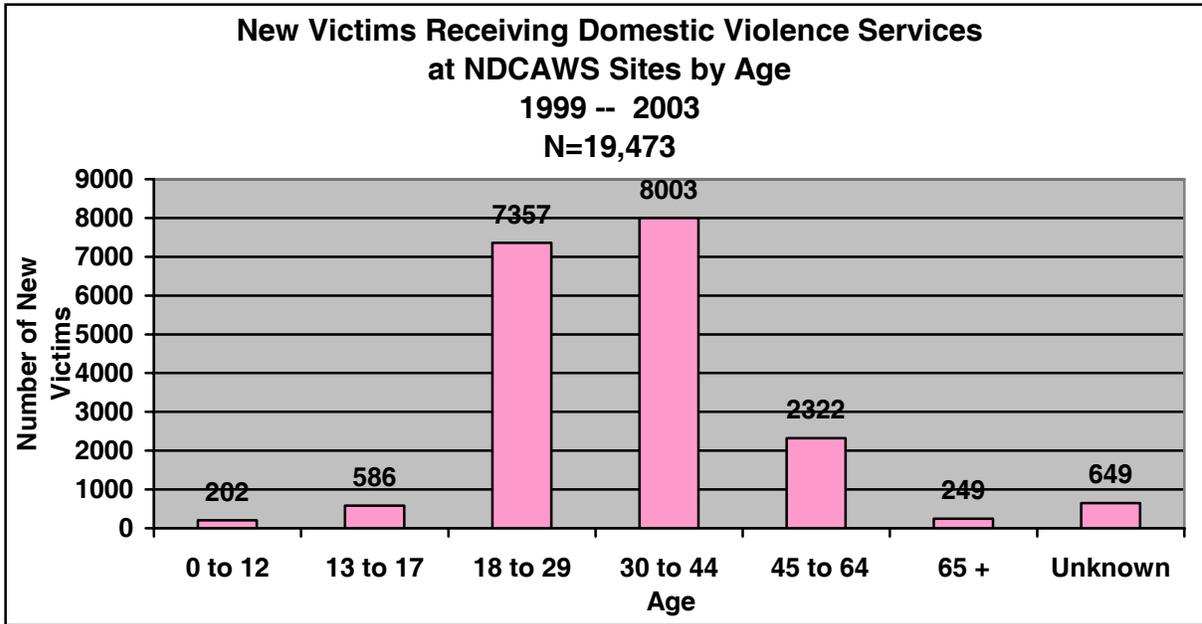


Figure 29. New Victims Receiving Domestic Violence Services at NDCAWS Sites by Age, North Dakota Council on Abused Women's Services.

Of the new victims (a person who has been a victim of domestic violence and the program has provided services to that person for the first time this month in the current year, only one time per calendar year) of domestic violence, 18,287 (94 percent) were female and 1,186 were male (6 percent). (Figure 30)

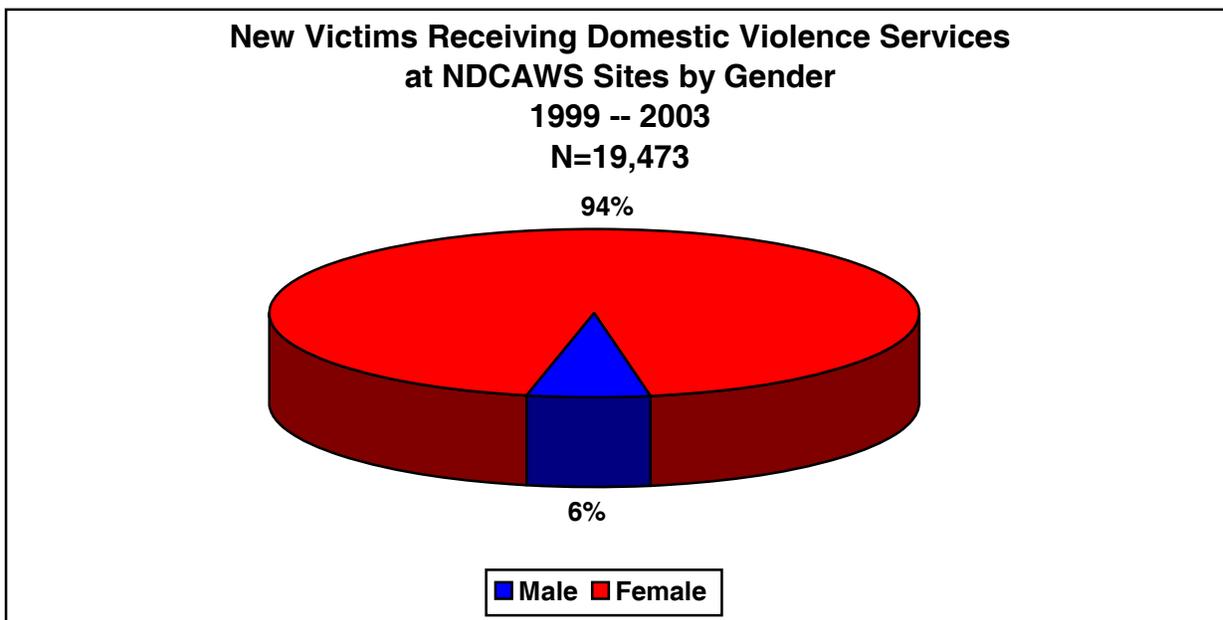


Figure 30. New Victims Receiving Domestic Violence Services at NDCAWS Sites by Gender, North Dakota Council on Abused Women's Services.

2. Race.

Race of domestic violence victims most frequently represented were Caucasian at 75 percent and American Indian at 18 percent. (Figure 31)

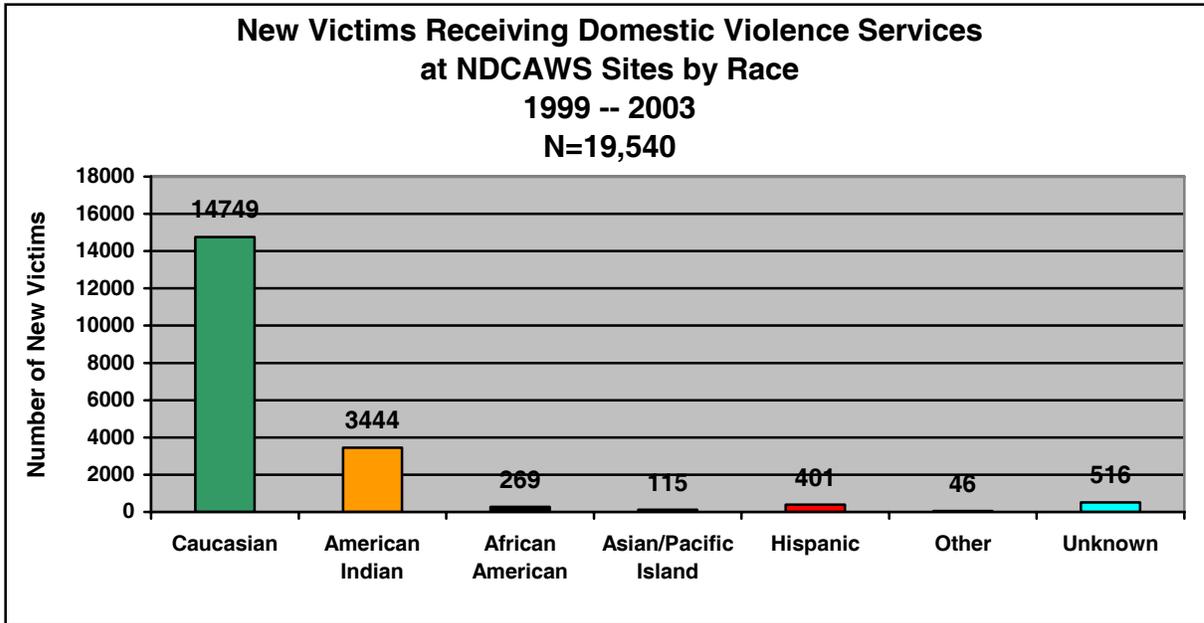


Figure 31. New Victims Receiving Domestic Violence Services at NDCAWS Sites by Race, North Dakota Council on Abused Women's Services.

3. Alcohol and Drug Use.

Alcohol use by the abuser was indicated in over 30 percent of new victim cases. (Figure 32)

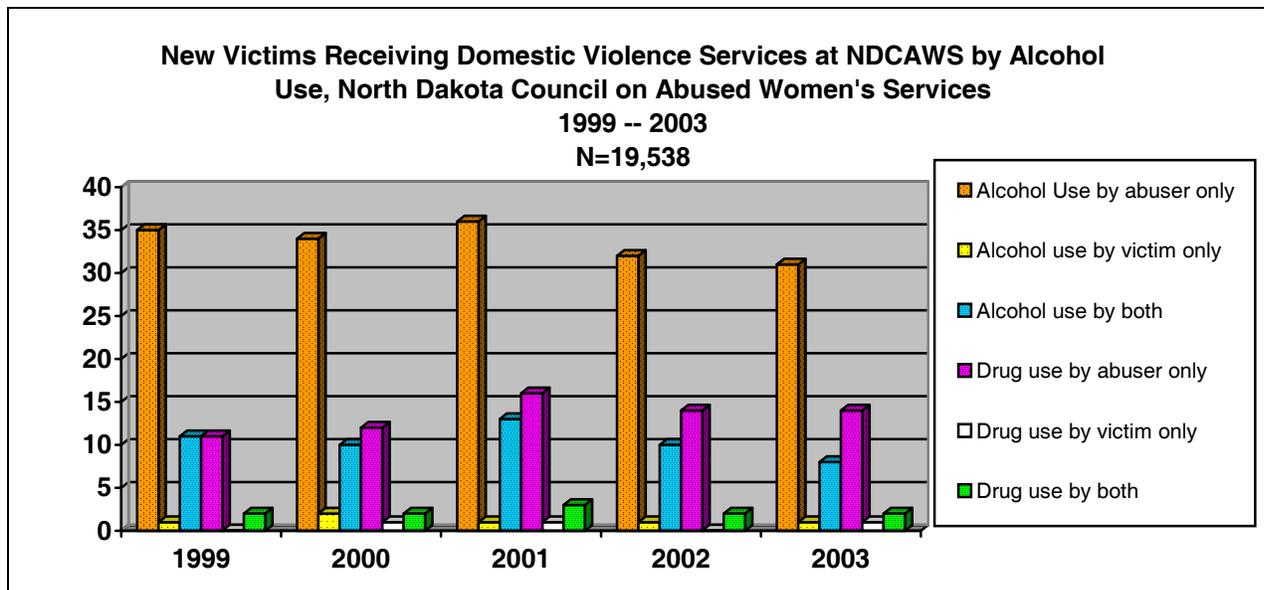


Figure 32. New Victims Receiving Domestic Violence Services at NDCAWS by Alcohol and Drug Use, North Dakota Council on Abused Women's Services.

4. Disability of Victims.

More than 12 percent of the new victims had a disability (physical disability, mental illness or developmentally delayed). (Figure 33)

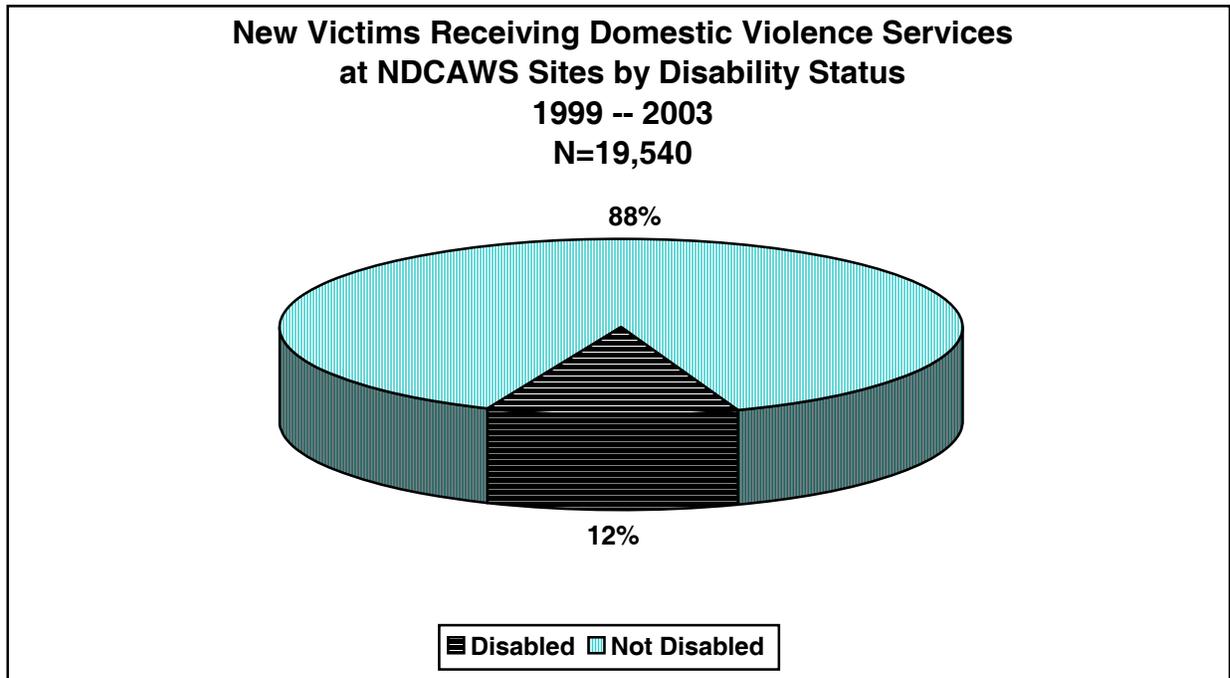


Figure 33. New Victims Receiving Domestic Violence Services at NDCAWS Sites by Disability Status, North Dakota Council on Abused Women's Services.

5. Length of Violent Relationship.

This is meant only for the current abusive relationship. More than 82 percent of all domestic violence victims had been exposed to a violent relationship for longer than one year. A significant number of victims, 7,887 (40 percent of all cases), had been exposed to a violent relationship for a time period of one to five years. An additional 25 percent (5,001 victims) had been exposed to a violent relationship for 6 or more years. (Figure 34.) As many as 45 percent of all new victims during the time period had used the domestic violence services at a NDCAWS/CASAND site in a previous year. That means that almost half of the victims seen in any given year will return for additional services in the future. Data on "length of exposure to a violent relationship" and "re-occurring request for services" cannot be delineated to reflect whether the number of years in a violent relationship is with one or multiple perpetrators.

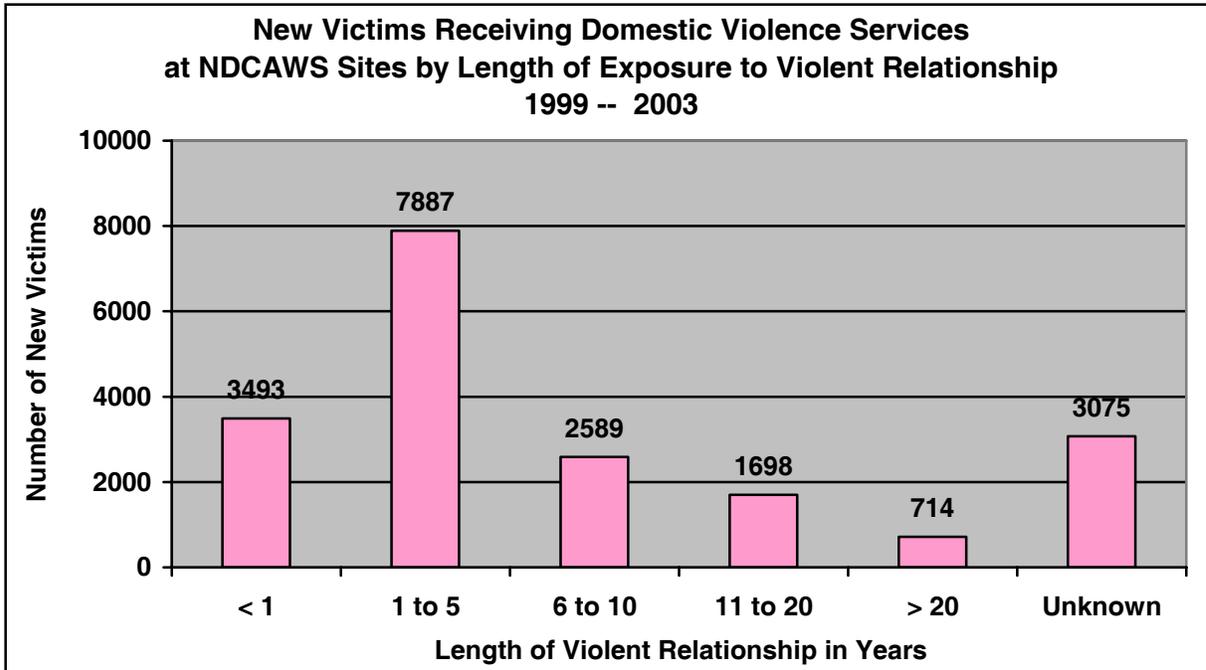


Figure 34. New Victims Receiving Domestic Violence Services at NDCAWS Sites by Length of Exposure to Violent Relationship, North Dakota Council on Abused Women’s Services.

Trends

Domestic violence continues to be perpetrated against young to middle age adult females, as approximately 78 percent of all cases involved individuals from ages 18 to 44, and 94 percent of all victims were female. Remaining in a violent relationship continues to be problematic, as more than 66 percent of victims indicated they had been exposed to a violent relationship for one year and longer. The number of victims of domestic violence who were disabled increased from 10.6 percent of the cases in 1999 to 14.1 percent in 2003.

Goal

Create a victim-centered, community-focused response plan to decrease domestic violence through multiple avenues.

Strategies

1. Policy
 - a. Mandatory reporting of elder abuse/assault.
 - b. Mandatory screening by emergency departments and primary care physicians to screen for domestic violence.
 - c. Increase capability of medical providers to screen for domestic violence victims.

2. Data Analysis

- a. Increase capacity to compile and analyze data from multiple sources (law enforcement, crisis centers and courts).
- b. Increase capacity to compile and analyze data from multiple medical data sources (hospital, EMS, primary care and trauma system).
- c. Identify methods to create a more comprehensive data collection system for the state that is more integrated, coordinated and comparable among involved entities.

3. Education/Training

- a. Create and implement prevention infusion curriculum into K-12 education settings to address intimate partner violence and sexual assault.
- b. Develop and sustain a domestic violence/sexual assault primary prevention task force that will build on best practices and lessons learned and develop resource tools and guidebook.
- c. Develop community-based prevention programming.
- d. Research, adapt and/or develop community-based prevention programming.
- e. Research, adapt and/or develop campaign on social norms, stressing that violence is not normal and not acceptable.
- f. Research and develop a protocol and checklist that is applicable to urban, rural and tribal community-specific needs for first responders who respond to victims of violence.
- g. Provide training and education for public health providers. Create standards, protocol and/or checklists for primary, secondary and tertiary prevention efforts.

Collaborators and Partners

North Dakota Council on Abused Women's Services/Coalition Against Sexual Assault in North Dakota, public health, WIC, faith community, college campus programs, school counselors, community organizations, American Indian communities, Air Force bases, county social services, media, North Dakota Nursing Association, North Dakota Healthcare Association, North Dakota Hospital Association, Division of Emergency Health Services, EMS Association, Association of Public Safety Communications Officials (APCO), law enforcement academies, community task forces, Department of Public Instruction.

Sexual Assault

Statement of Problem: The North Dakota Council on Abused Women’s Services’ (NDCAWS), 21 domestic violence and sexual assault agencies across the state, provided the sexual assault information for this report.

Sexual assault is a broad term inclusive of all non-consensual sex acts and contact. This includes sexual harassment, sexual battery, rape, attempted rape, drug-facilitated sexual assault, sexual assault due to mental or age capacity, victims unconscious or unaware of the actions, sexual exploitation, child pornography, violent adult pornography, prostitution, sex trafficking and many more. This word is also interchangeable with sexual violence.

In general, rape is considered non-consensual sexual intercourse between two adults (mostly because that is the way the FBI’s Uniform Crime Report uses the word). Oftentimes rape is limited in scope to forcible acts, and does not include drug-facilitated sexual assault, assault against a person unable to consent due to age or mental capacity, or forcible sex acts between or with individuals younger than 18. Sexual abuse is a broad term generally used to include all sex acts committed against children. Note details in the North Dakota Century Code.

Data is only for victims that sought services through one of the NDCAWS/CASAND sites from 1999 through 2003. As a result, the data under-reports the problem of sexual assault, since many sexual assaults go unreported because the victims fear they will not be believed, they are too embarrassed to tell anyone, or they do not know they have actually experienced legally defined rape or sexual assault. Based on the best available measures, conservative estimates suggest that at least 25 percent of American women have been sexually assaulted in adolescence or adulthood, and that 18 percent have been raped. From 1999 through 2003, a total of 3,930 new victims of sexual assault received services through the NDCAWS/CASAND sites. The number of new victims seeking sexual assault services at one of the 21 sites ranged from a low of 752 in 2000, to a high of 851 in 1999. (Figure 35) The number of cases has increased each of the past four years, but still remains below a high reported in 1999.

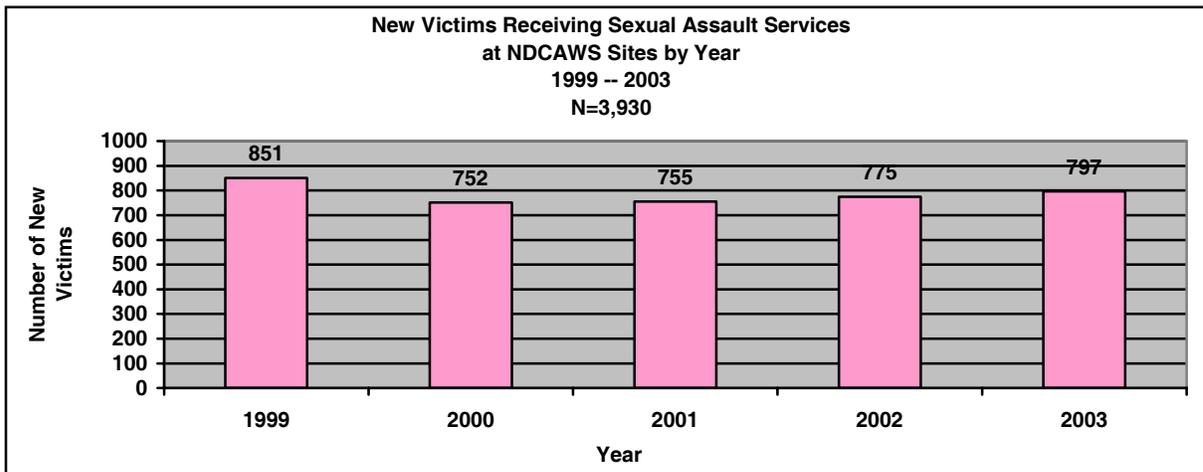


Figure 35. New Victims Receiving Sexual Assault Services at NDCAWS Sites by Year, North Dakota Council on Abused Women’s Services.

1. Age and Gender.

Age - Sexual assaults to individuals younger than 30 accounted for 73 percent of all the cases, and individuals 13 to 17 were victims in 23 percent of the reported cases. (Figure 36)

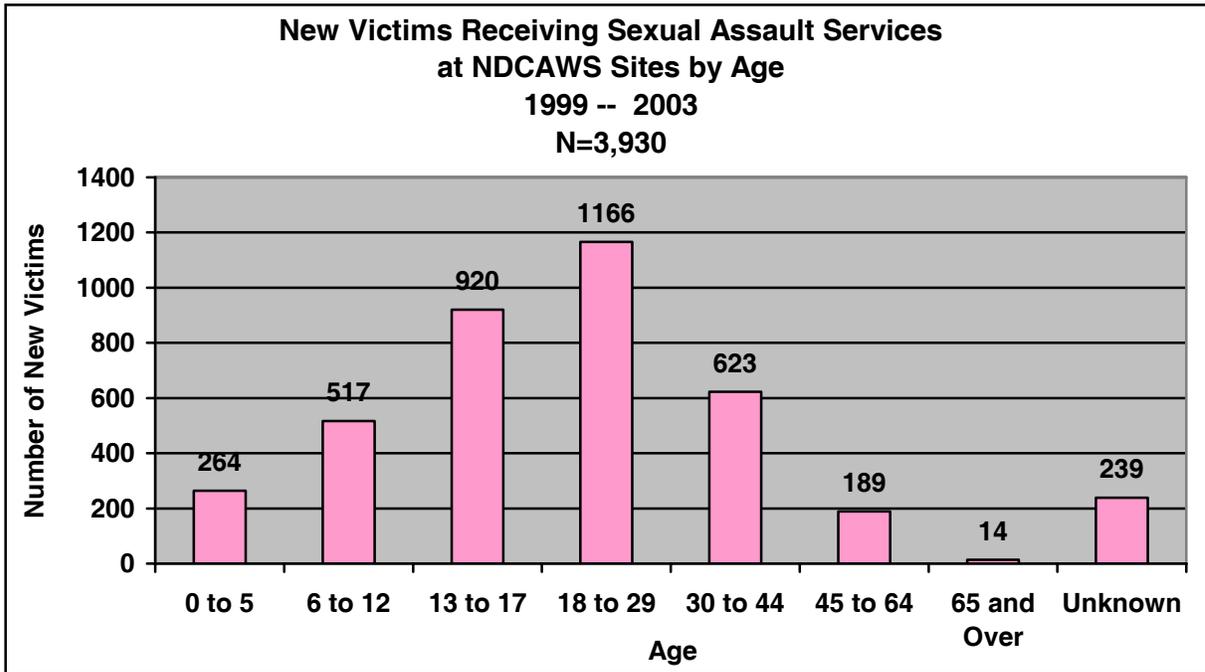


Figure 36. New Victims Receiving Sexual Assault Services at NDCAWS Sites by Age, North Dakota Council on Abused Women's Services.

Ninety-one percent of the victims of sexual assault were female, and 96 percent of the assailants were male. (Figure 37 and 38)

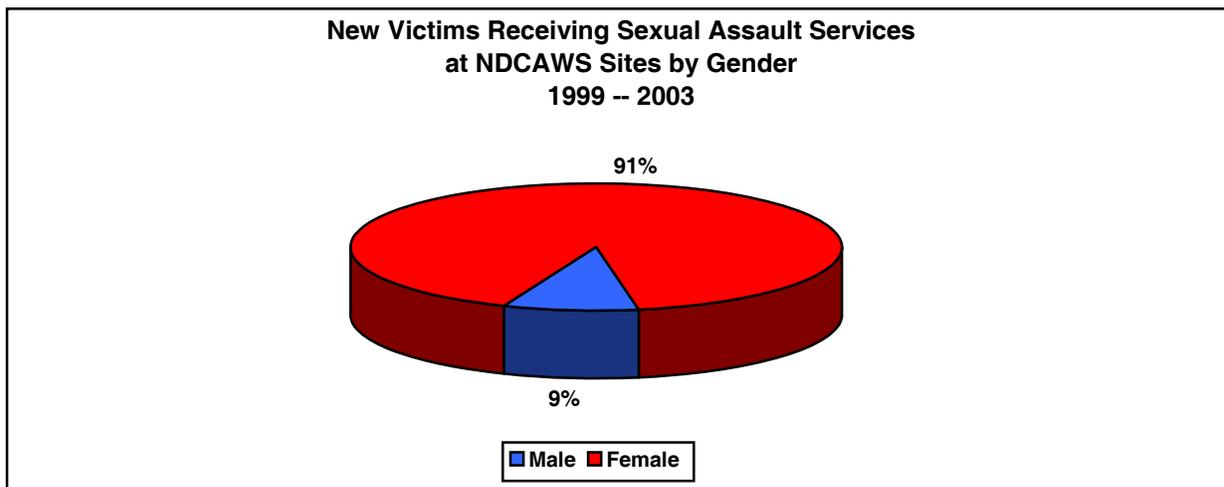


Figure 37. New Victims Receiving Domestic Violence Services at NDCAWS Sites by Gender, North Dakota Council on Abused Women's Services.

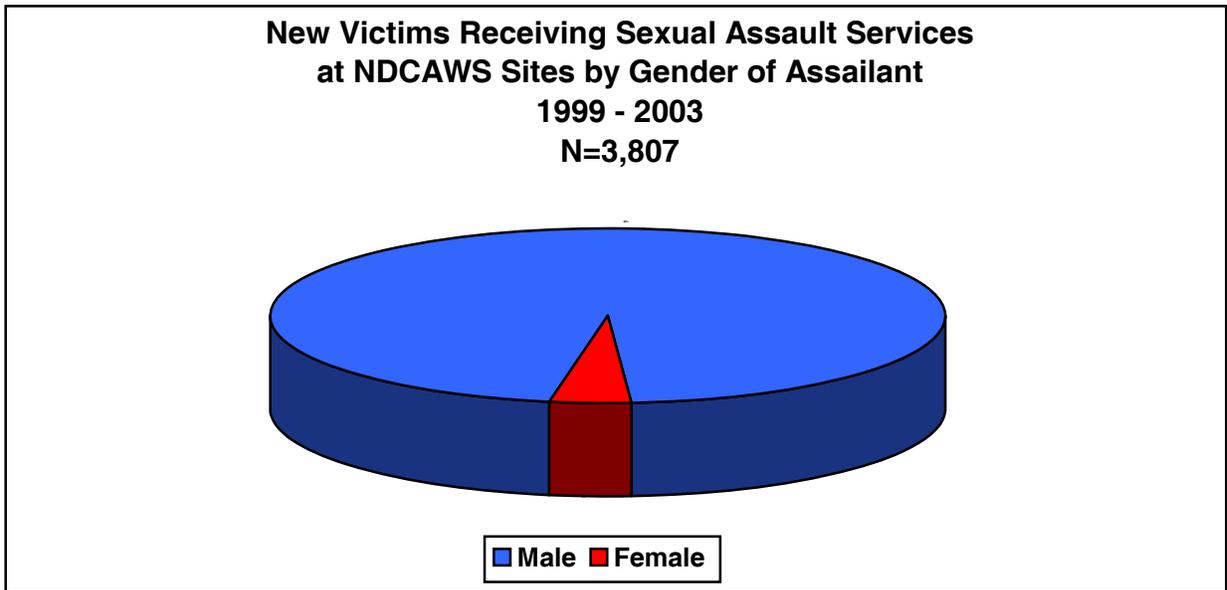


Figure 38. New Victims Receiving Sexual Assault Services at NCAWS Sites by Gender of Assailant, North Dakota Council on Abused Women’s Services.

2. Race

While victims were mainly Caucasian (82 percent), a significant percentage of victims were American Indian (12 percent). (Figure 39)

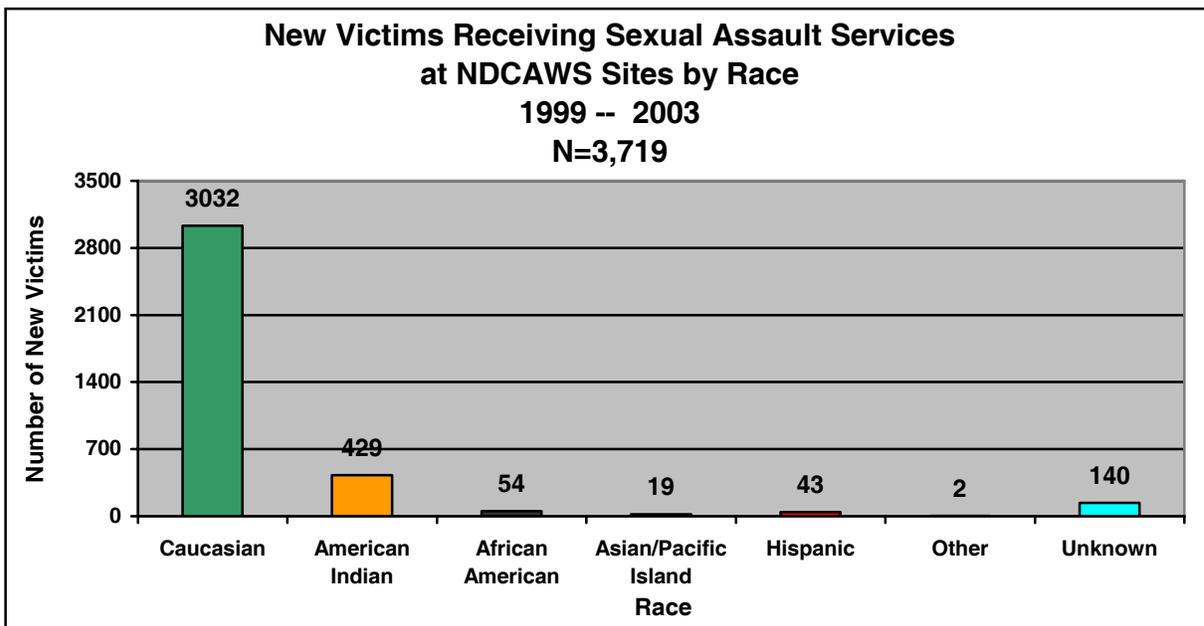


Figure 39. New Victims Receiving Sexual Assault Services at NCAWS Sites by Race, North Dakota Council on Abused Women’s Services.

3. Disability

Of the total number of victims of sexual assault, 19 percent were disabled at the time of the incident. (Figure 40)

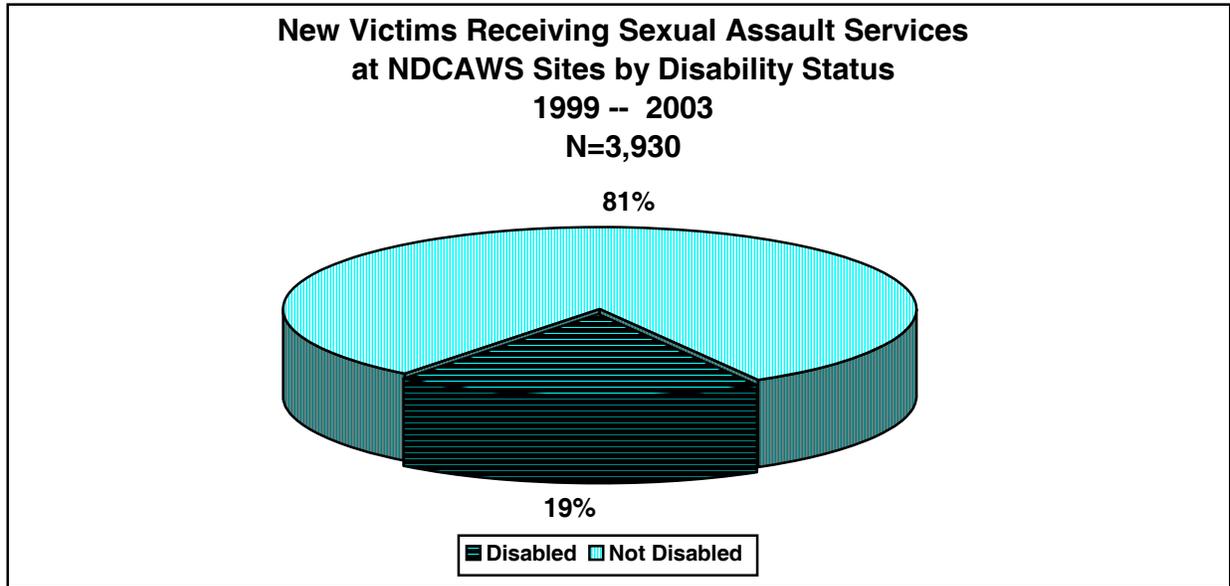


Figure 40. New Victims Receiving Sexual Assault Services at NDCAWS Sites by Disability Status, North Dakota Council on Abused Women's Services.

4. Drug and Alcohol Use.

No data is available on drug and alcohol use for sexual assault cases.

5. Locality/Familiarity.

More than 60 percent of victims were assaulted in either their own residence or the residence of the assailant, and approximately 40 percent of the assailants were either a friend/acquaintance/date of the victims.

Summary

Sexual assault continues to be perpetrated against young females, as approximately 73 percent of all cases involved individuals younger than 30, and 91 percent of all victims were female. A significant percentage of sexual assaults were directed toward adolescents ages 13 to 17; this age group accounted for 23 percent of all the cases. While reported cases declined from 1999 to 2000, they increased each of the next three years. Sexual assault victims who were American Indian comprised 12 percent of the total cases, which is disproportionate to the state population ratio.

Goal

Create a victim-centered, community-focused response plan to decrease sexual assault through multiple avenues.

Strategies

1. Data/Analysis

- a. Implement CDC's Sexual Violence Modules in Behavioral Risk Factors Surveillance Survey.
- b. Implement CDC's Sexual Violence Modules in the Youth Behavioral Risk Factors Surveillance Survey.
- c. Increase capacity to compile and analyze data from multiple sources (law enforcement, crisis centers and courts).
- d. Increase capacity to compile and analyze data from multiple medical data sources (hospital, EMS, primary care and trauma system).
- e. Identify methods to create a more comprehensive data collection system for the state that is more integrated, coordinated and comparable among involved entities.

2. Education/Training

- a. Create and implement prevention infusion curriculum into K-12 educational settings across the state to address intimate partner violence and sexual assault.
- b. Create and implement a social norms campaign using peer effective messages addressing men, boys and American Indians.
- c. Expand and enhance professional training to law enforcement, prosecutors, judges, medical professionals and advocates on effective collaboration in sexual assault.

Collaborators and Partners

North Dakota Department of Health, North Dakota Council on Abused Women's Services/Coalition Against Sexual Assault in North Dakota, North Dakota Medical Association, North Dakota Nurses Association, Attorney General's Office, North Dakota Prosecutors Association, North Dakota Department of Public Instruction, North Dakota Supreme Court, North Dakota Law Enforcement Training Academy.

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