

Fatalities in Manitoba Workplaces

For the Period 1995 - 2005

April 28, 2006

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Executive Summary

This report identifies some important facts regarding *acute-hazard*¹ and *occupational disease*² fatalities from 1995 to 2005.

The fatality characteristics are presented from a variety of perspectives. Fatalities are sorted by the cause of death—either from an *acute-hazard* (e.g., deaths from exposure to hazards such as moving vehicles, explosions, falls from height that cause serious traumatic injuries) or from *occupational disease* (e.g., exposures to asbestos and toxic fumes causing cancer in workers). Fatalities are also reported by the gender and age of the worker and by the industry sectors in which they occur.

These facts include the following:

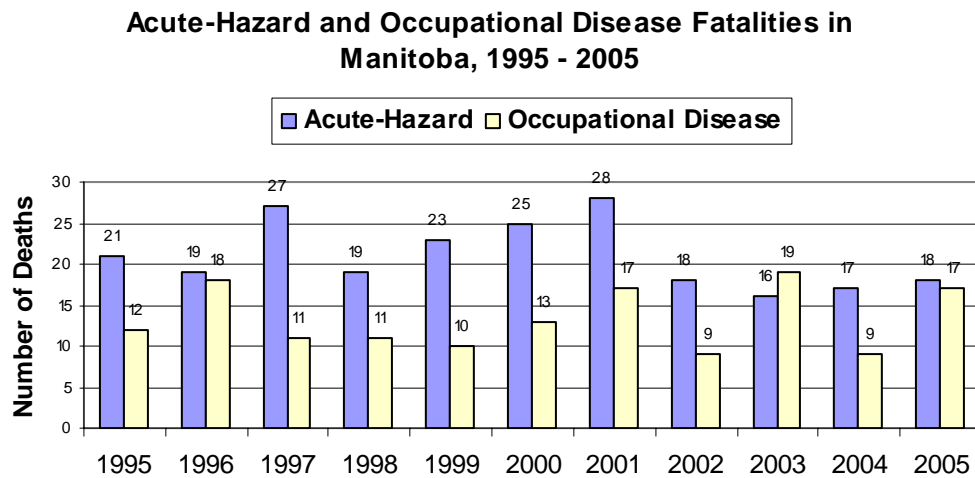
All Fatalities

- A total of 377 workplace fatalities were recorded from 1995 to 2005. Of these, 231 or 61% were the result of *acute-hazards* and 146 or 39% were the result of *occupational diseases*.
- On average, 34 work-related fatalities have occurred each year over the past 11 years (Figure 1).
- Of these fatalities, on average 21 annually were from *acute-hazards*, and 13 annually from *occupational diseases*.

¹ An *acute-hazard* exposure death is a work-related fatality that occurs when a worker is injured or exposed to a significant amount of a hazardous agent. In such cases, the worker dies immediately or soon after the exposure. This category includes such deaths as falls from height, drowning, highway crashes, and chemical poisoning. It excludes deaths due to infectious agents. Acute-hazard fatalities include fatalities accepted by the Manitoba WCB, and those identified as work-related by the Chief Medical Examiner's Office, the RCMP, and the Workplace Safety and Health Division. These fatalities are recorded by year of death.

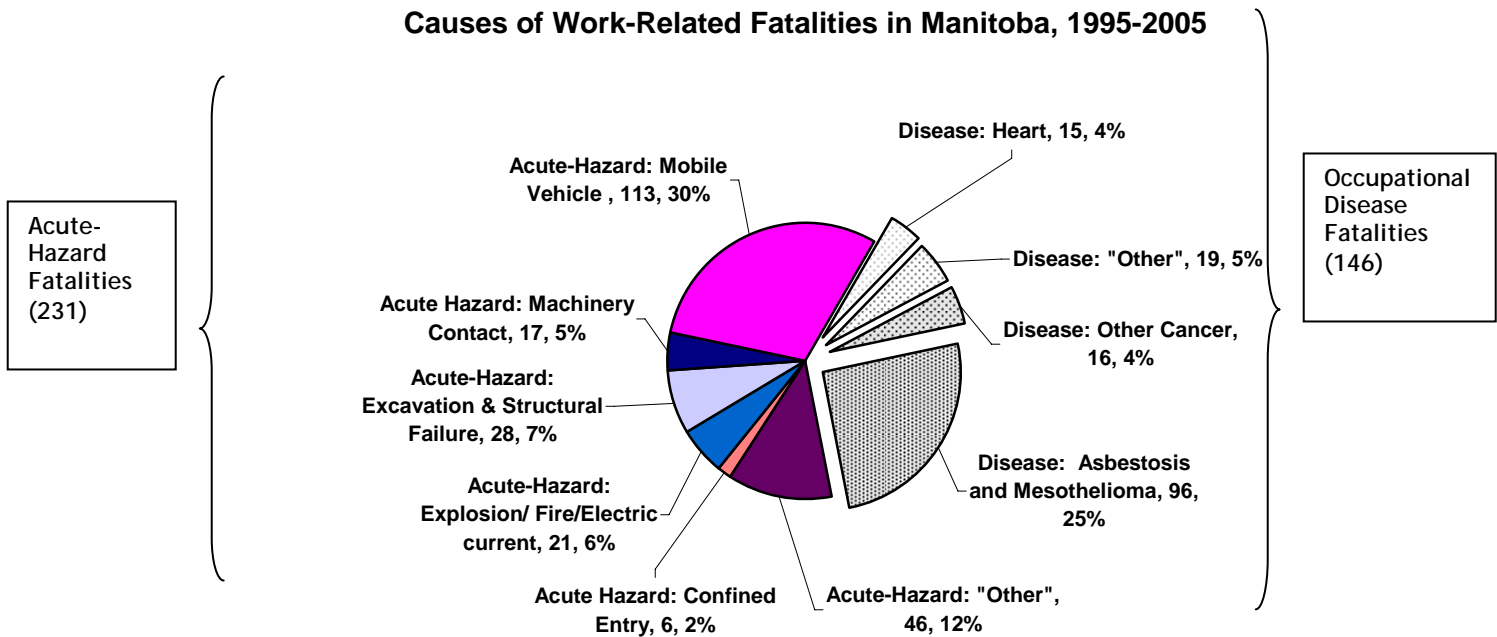
² An *occupational disease* death is a work-related fatality that occurs when a worker develops a disease as the result of a long-term exposure to a hazardous substance or contact with a disease-causing agent. In such cases, the worker dies after months or years have passed. This category also includes traumatic or single events that have precipitated a functional failure such as a myocardial infarction or an acute carbon monoxide inhalation. The fatalities are organized by year of acceptance by the Workers Compensation Board. Only those occupational disease fatalities accepted by the WCB are included in this report. These fatalities are recorded by year of acceptance.

Figure 1



- Fifty-nine percent (59%) of work-related fatalities occurred in three industrial sectors - transportation, communications and utilities (87 or 23%), construction (70 or 19%) and agriculture (65 or 17%).
- Ninety-eight percent (98%) of those who died as a result of injuries and illnesses were men.
- Overall, no improvement has been observed in the number of fatalities among young workers (those between the ages of 15 to 24) which averaged 2.5 annually over this time period. In the past 11 years, at least one *acute-hazard* fatality has involved a youth every year.
- Workers aged 55 and older accounted for 34% of all *acute-hazard* fatalities and 82% of all *occupational disease fatalities*.

Figure 2



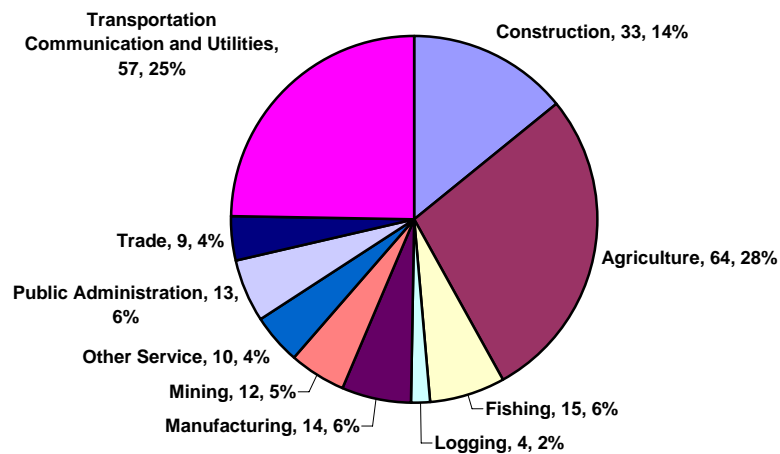
- Nearly one-third (113) of all work-related fatalities were the result of incidents involving mobile vehicles (e.g., trucks, trains, airplanes) (Figure 2).
- Asbestos-related diseases (96) were the second most common cause of work-related fatalities overall, accounting for one-quarter of all work-related deaths.

Acute-Hazard Fatalities

- The largest number of *acute-hazard* fatalities (64 or 28%) occurred in the agricultural sector, followed by the transportation, communication and utilities sector with 57 deaths or 25%, and the construction sector with 33 deaths or 14% (Figure 3).
- The number of *acute-hazard* fatalities has varied year-over-year and in the last four years (2002 to 2005) averaged 17, consistently below the eleven year average of 21 fatalities.

Figure 3

Acute Hazard Work Related Fatalities by Industry Sector, 1995-2005 (N=231)



- Declines in the number of *acute-hazard* fatalities in the mining and agriculture sectors have been offset by increases in *acute-hazard* fatalities in the transportation, communication and utilities and fishing sectors. The last *acute-hazard* death in mining was in 2000.

Occupational Disease Fatalities

- Of the 146 *occupational disease* fatalities accepted by the WCB from 1995 to 2005, the largest number (37 or 25%) was in the construction sector. The next largest number occurred in the transportation, communication and utilities sector (30 deaths or 21%). These two sectors were followed by public administration with 22 deaths or 15%, manufacturing with 17 deaths or 12% and other service industries with 17 deaths or 12%.
- Two-thirds of all *occupational disease* deaths are asbestos-related.
- Over 44% of all fatalities in the construction sector were from asbestos-related diseases. These exposures occurred years ago. Since that time, standards for the protection of workers from hazardous substances such as asbestos have been strengthened.

Fatalities in Manitoba Workplaces For the Period 1995 - 2005

Introduction

This report provides data on workplace fatalities that occurred in Manitoba from 1995 to 2005. Included in these statistics are fatalities accepted by the Workers Compensation Board (WCB) and fatalities obtained from the fatality surveillance system maintained by the Workplace Safety and Health Division of Manitoba Labour and Immigration (WSHD). This system gathers information on fatalities from the WSHD, the WCB, the Chief Medical Examiner's Office, Manitoba Department of Highways and the Royal Canadian Mounted Police.

The statistics presented in this report vary slightly from those published in the *Manitoba Workplace Injury and Illness Statistics Report for 2000-2004* released in October 2005. This variance is the result of improvements to the fatality surveillance system. This report includes additional fatalities recorded by sources external to the WCB and WSHD that had not previously been captured by this surveillance system.

Bystander³ fatalities, which have been previously reported in the *Manitoba Workplace Injury and Illness Statistics Report*, are not included in this report. However, it should be noted that farms are distinct from almost all other workplaces. Farm families live, play and work in the same area. Consequently, bystanders—persons who are not working on the farm, but who are present on the worksite, watching or communicating with the worker—are sometimes involved in farming fatalities. From 2000 to 2005, 15 bystanders were killed in farm-related incidents.

The fatality characteristics are presented from a variety of perspectives. Fatalities are sorted by the cause of death—either from an *acute-hazard* (e.g., deaths from exposure to hazards such as moving vehicles, explosions, falls from height that cause serious traumatic injuries) or from *occupational disease* (e.g., exposures to asbestos and toxic fumes causing cancer in workers). Fatalities are also reported by the gender and age of the worker and by the industry sectors in which they occur.

³ A bystander is a person who is exposed to the hazards at the worksite and who is killed in the "workplace", but who was not actually a worker at the time of the incident. A worksite may include a farm or a highway. Bystander fatalities occur in several industry sectors, but were not included in the analysis of this report.

Overview

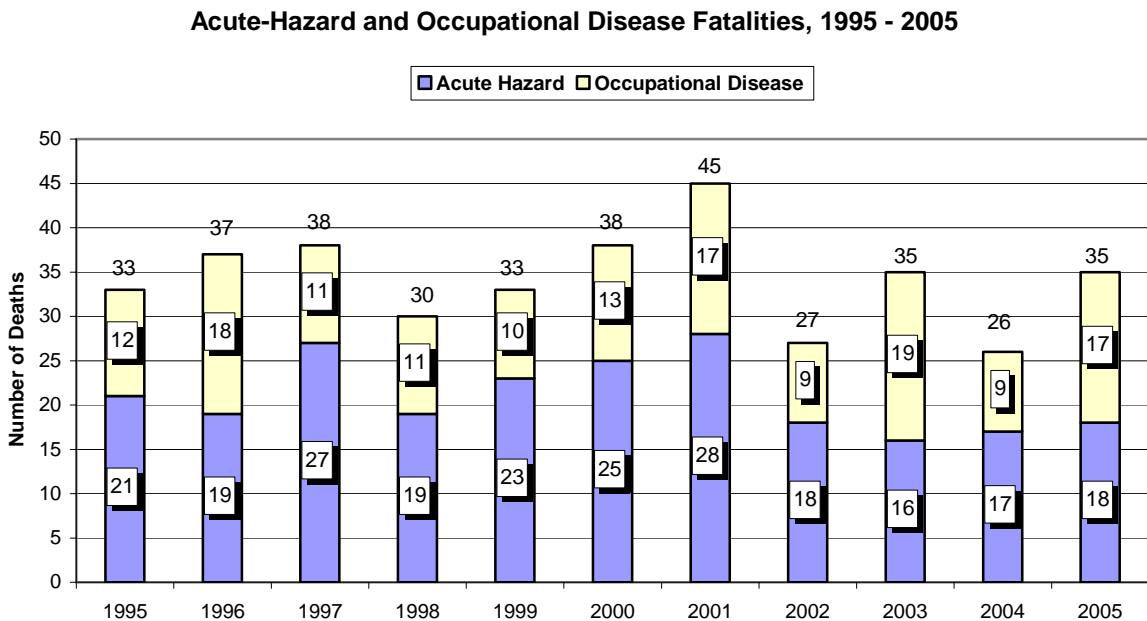
Between 1995 and 2005, a total of 377 workplace fatalities were recorded in Manitoba. Of these fatalities, 231 (61%) were as a result of *acute-hazards* while 146 (39%) occurred as a result of *occupational diseases*.

The number of work-related fatalities has shown considerable variation over the 1995-2005 period (Figure 4). On average, there were 34 work-related fatalities each year in Manitoba over this eleven-year period.

The average number of *acute-hazard* fatalities annually was 21 between 1995 and 2005.

From 2002 to 2005, the average number of *acute-hazard* fatalities, 17, has been consistently below the eleven-year average of 21.

Figure 4



On average, 13 *occupational disease* fatalities were accepted by the WCB each year over the 1995-2005 period.

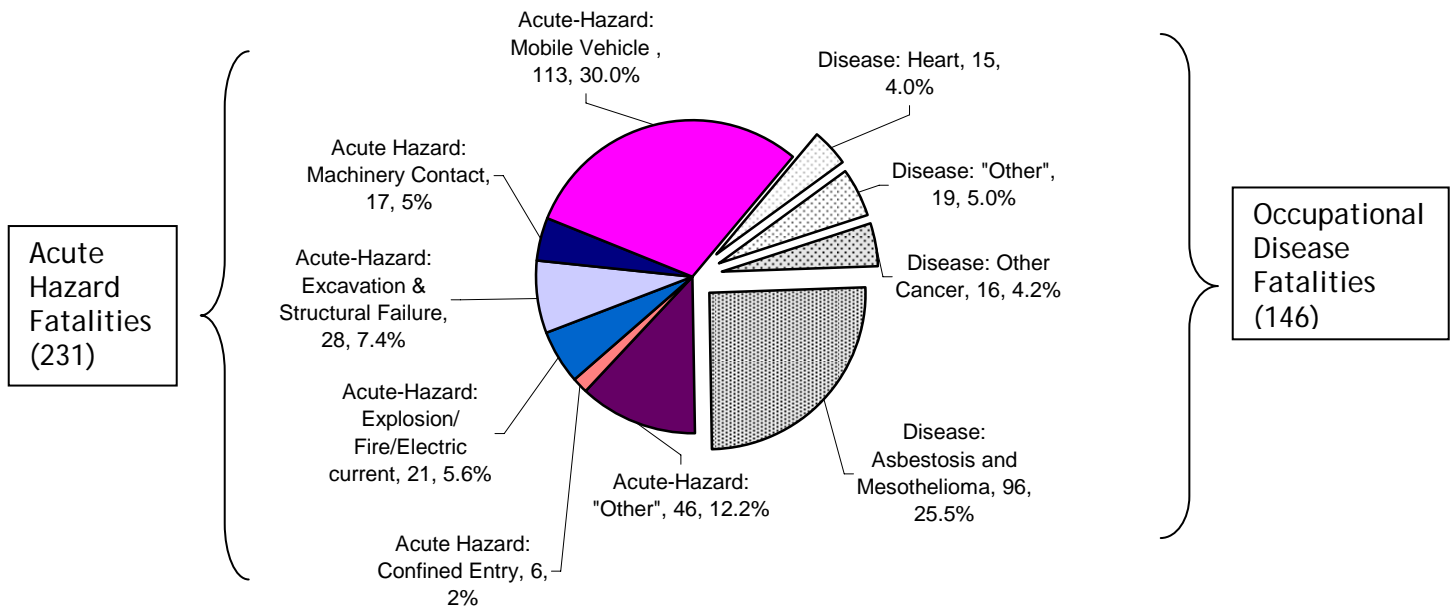
Incidents involving mobile vehicles (e.g., trains, trucks, airplanes) resulted in the greatest number of Manitoba's work-related fatalities. These deaths account for 113, or 30%, of all work-related fatalities over this period (Figure 5).

The second most common cause of all workplace fatalities was exposure to asbestos fiber. Exposure to these fibers accounted for 96 deaths or 25% of all work-related fatalities between 1995 and 2005 and two-thirds of *occupational disease* deaths. These exposures happened decades ago. Since then, standards have been strengthened to protect workers against this and other hazardous substances.

Other common causes of work-related fatalities include injuries sustained during excavations or structural failure (28 deaths or 7%), exposures to fire or electric current (21 deaths or 6%), machinery contact (17 or 5%), heart injuries (15 deaths or 4%) and other cancers (16 deaths or 4%).

Figure 5

Causes of Work-Related Fatalities 1995-2005



Appendix 1 outlines details on *acute-hazard* fatalities that occurred in 2005 and *occupational disease* fatalities that were accepted by the WCB in 2005.

Gender

Between 1995 and 2005, 98% of all *acute-hazard* fatalities and *occupational disease* fatalities occurred to men (Table 1).

Table 1

Acute-Hazard and Occupational Disease Fatalities by Gender, 1995-2005			
Gender	Acute-Hazard	Occupational Disease	Total
Male	226 (61%)	143 (39%)	369 (98%)
Female	5 (63%)	3(37%)	8 (2%)
Total	231 (61%)	146 (39%)	377

Age

From 1995 to 2005, 197 work-related fatalities (52%) were among workers aged 55 years and over. 60% of these deaths were from *occupational diseases*.

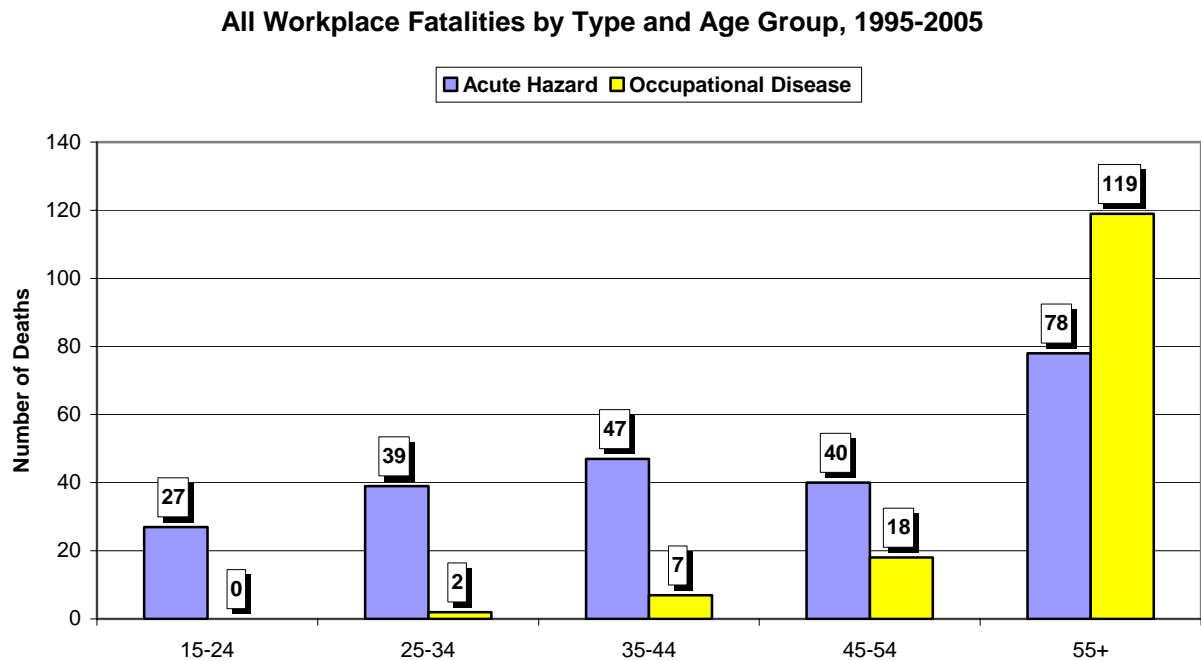
Fifty-eight (58) fatalities (15%) were among workers aged 45 to 54, 54 (14%) occurred in the 35 to 44 age group, 41 (11%) in the 25 to 34 group and 27 (8%) in the 15 to 24 age group (Figure 6).

The vast majority of *occupational disease* fatalities (119 or 82%) occurred among older workers. These workers tend to succumb to diseases caused by exposures to toxic substances 20 to 30 years prior to the onset of illness.

The greatest number of *acute-hazard* fatalities occurred to workers in the 55 and over age group (78 deaths or 34%). This was followed by workers in the 35-44 age group (47 deaths or 20%), the 45-54 age group (40 deaths or 17%), the 25-34 age group (39 deaths or 17%), and the 15-24 age group (27 deaths or 12%).

The number of *acute-hazard* fatalities experienced by these different age groups has shown considerable variation over the 1995-2005 period (Table 2). While the 55 and over age group has generally had between five to nine fatalities annually, no fatalities occurred in that age group in 2002.

Figure 6



Acute-hazard fatalities among the 15 to 24 age group ranged from 1 to 4 annually (averaging 2.5 annually from 1995 to 2005). In the past 11 years, there has been at least one *acute-hazard* youth fatality each year.

Other age groups presented in Table 2 experienced similar variation annually.

Table 2

Acute-Hazard Fatalities by Age Group, 1995-2005													
Sector	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total	Mean per year
15-24	2	2	4	2	3	1	4	4	2	2	1	27	2.5
25-34	1	2	6	4	3	5	6	5	3	1	3	39	3.5
35-44	3	5	5	2	7	7	3	4	3	5	3	47	4.3
45-54	6	1	4	3	1	6	7	5	3	2	2	40	3.6
55+	9	9	8	8	9	6	8	0	5	7	9	78	7.1
Total	21	19	27	19	23	25	28	18	16	17	18	231	21.0

Industry Sector⁴

From 1995 to 2005, three industrial sectors accounted for 59% of all work-related fatalities: transportation, communication and utilities (87 deaths or 23% of fatalities), construction (70 deaths or 19%) and agriculture (65 deaths or 17%) (Figure 7).

Other sectors accounted for the following number and proportions: public administration⁵ (35 deaths or 9%), manufacturing (31 deaths or 8%), other service industries⁶ (27 deaths or 7%), mining (24 deaths or 6%) and trade (19 deaths or 5%).

Figure 7

**Work-Related Fatalities by Industry Sector, 1995-2005
(N=377)**

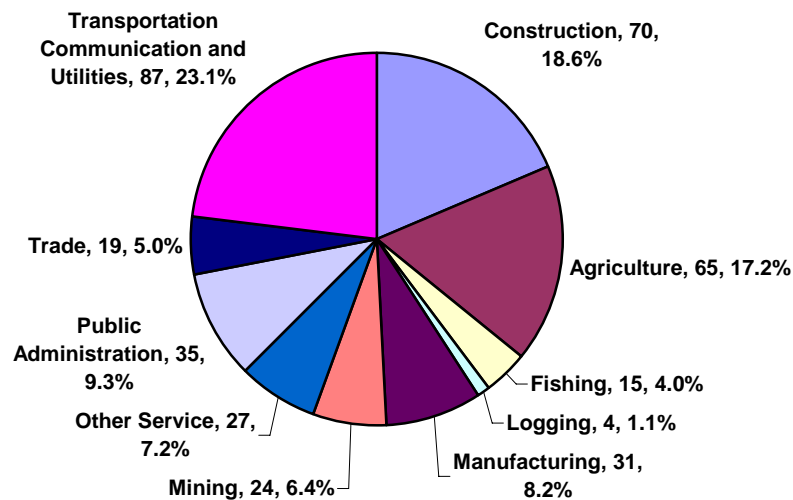


Table 3 displays the number of workplace fatalities by industry sector from 1995 to 2005. In most sectors, the annual number of fatalities varied greatly

⁴ Fatalities among self-insured employers have been allocated to the industry sector within which the self-insured employer operates.

⁵ The public administration sector includes the City of Winnipeg, Province of Manitoba and Government of Canada.

⁶ The "other service" sector includes schools and universities.

year-over-year. For example, the number of fatalities in the construction sector varied from 2 in 2005 to 11 in 2001.

The agricultural sector also exhibited a wide annual variation in fatalities, from 1 in 2002 to 11 in 1995.

Table 3

Fatalities by Sector, 1995-2005													
Sector	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total	Mean per year
Agriculture	11	4	10	7	6	8	3	1	6	4	5	65	5.9
Fishing	0	0	0	0	1	0	3	2	1	4	4	15	1.4
Logging	0	0	0	0	0	0	1	1	0	1	1	4	0.4
Mining	4	5	2	4	2	2	1	0	0	1	3	24	2.2
Construction	3	9	6	7	10	4	11	9	6	3	2	70	6.4
Manufacturing	2	6	6	1	1	5	1	3	4	1	1	31	2.8
Transportation Communication and Utilities	4	6	8	4	11	13	13	6	5	8	9	87	7.9
Trade	3	2	1	3	0	1	4	1	0	3	1	19	1.7
Other Service	1	3	1	2	1	1	4	2	5	1	6	27	2.5
Public Administration	5	2	4	2	1	4	4	2	8	0	3	35	3.2
Total	33	37	38	30	33	38	45	27	35	26	35	377	34.3

Acute-Hazard Fatalities by Industry Sector

The largest number and percentage (64 or 28%) of *acute-hazard* fatalities occurred in the agricultural sector, followed by the transportation, communication and utilities sector with 57 deaths or 25% of *acute-hazard* fatalities and the construction sector with 33 deaths or 14%. Industries that recorded a smaller proportion of *acute-hazard* fatalities included: fishing (15 or 6%), manufacturing (14 or 6%), public administration (13 or 6%), mining (12 or 5%), other service (10 or 4%) and trade (9 or 4%). Only 4 fatalities (2%) were in the logging sector (Figure 8).

While the number of *acute-hazard* fatalities varied greatly from year to year, the annual number of fatalities between 2002 and 2005 was consistently below the eleven year average of 21 (Table 4). It remains to be seen whether this is the beginning of a downward trend or merely a reflection of the normal annual variation.

Figure 8

**Acute-Hazard Work-Related Fatalities by Industry Sector,
1995-2005
(N=231)**

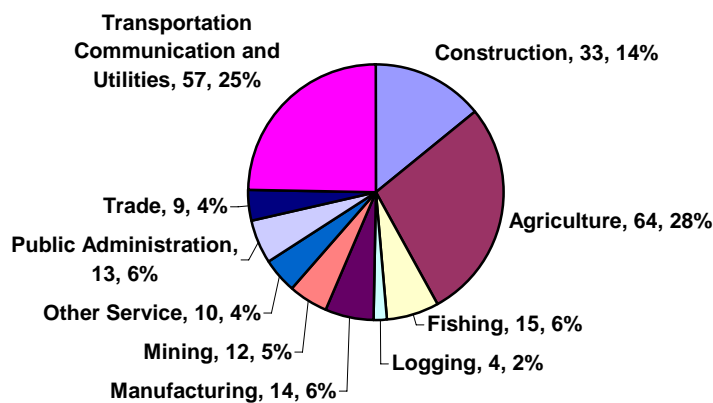


Table 4

Acute-Hazard Fatalities by Industry Sector, 1995-2005													
Sector	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total	Mean per year
Agriculture	11	4	10	7	6	7	3	1	6	4	5	64	5.8
Fishing ⁷	0	0	0	0	1	0	3	2	1	4	4	15	1.4
Logging	0	0	0	0	0	0	1	1	0	1	1	4	0.4
Mining	1	4	1	3	1	2	0	0	0	0	0	12	1.1
Construction	2	4	1	2	6	1	6	6	3	1	1	33	3
Manufacturing	1	2	4	0	1	2	0	1	2	0	1	14	1.3
Transportation Communication and Utilities ⁸	1	3	8	4	7	11	10	4	1	3	5	57	5.2
Trade	1	1	1	1	0	0	1	1	0	3	0	9	0.8
Other Service	0	0	0	2	0	0	2	1	3	1	1	10	0.9
Public Administration	4	1	2	0	1	2	2	1	0	0	0	13	1.2
Total	21	19	27	19	23	25	28	18	16	17	18	231	21.0

⁷ Fatalities in Fishing are underreported as this sector was not tracked before 2000.

⁸ This sector is under reported as some work related deaths are claimed through auto insurance.

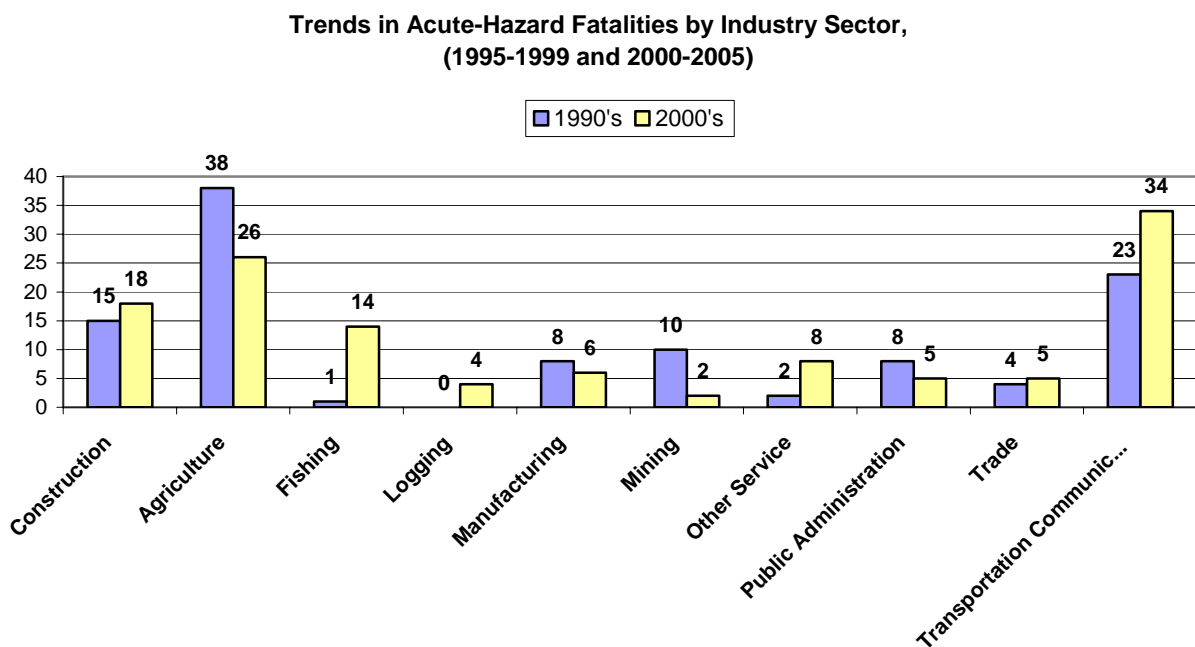
The number of *acute-hazard* fatalities in the agricultural sector has declined, going from 38 deaths in the last five years of the 1990s (average 8 annually) to 26 in the first six years of the 2000s (average 4 annually).

There was also a large decline in *acute-hazard* fatalities in the mining sector, the number going from 10 in the last five years of the 1990s to 2 in the first six years of the 2000s - with none since 2001 (Figure 9).

By comparison, the transportation⁹ sector recorded an increase in the number of *acute-hazard* fatalities, from 23 to 34 deaths for these two respective time periods.

The number of *acute-hazard* fatalities in the construction and manufacturing sector remained relatively constant. For construction, 15 deaths in the late 1990s compared to 18 deaths since 2000 and for manufacturing, 8 deaths in the late 1990s vs. 6 since 2000.

Figure 9



While 1 in 3 *acute-hazard* deaths are to older workers (those aged 55 and over), about 70% of all farm fatalities occurred to older workers.

In construction, a disproportionate number of the acute-hazard workplace fatalities (21%) are to youth. This is 26% of all youth *acute-hazard* fatalities

⁹ Part of the increase in the transportation sector can be attributed to improved fatality surveillance methods.

annually. Similarly, 22% of youth fatalities occur in agriculture. While workers in agriculture also account for 28% of *acute-hazard* deaths, they account for 58% of all *acute-hazard* deaths to workers over the age of 55.

Occupational Disease Fatalities by Industry Sector¹⁰

Of the 146 *occupational disease* fatalities accepted by the WCB from 1995 to 2005, the largest number (37 deaths or 25%) were in the construction sector (Figure 10). The next largest number and percentage of *occupational disease* fatalities occurred in the transportation, communication and utilities sector (30 deaths or 21%). These two sectors were followed by public administration (22 deaths or 15%), manufacturing (17 deaths, 12%), other service industries (17 deaths or 12%), mining (12 deaths or 8%) and trade (10 deaths or 7%).

Figure 10

**Occupational Disease Fatalities by Industry Sector, 1995-2005
(N=146)**

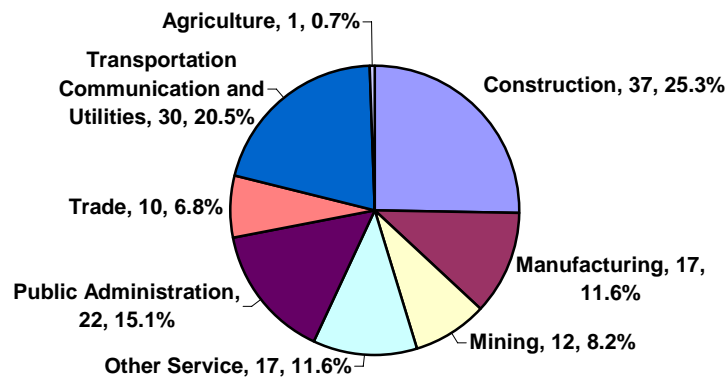


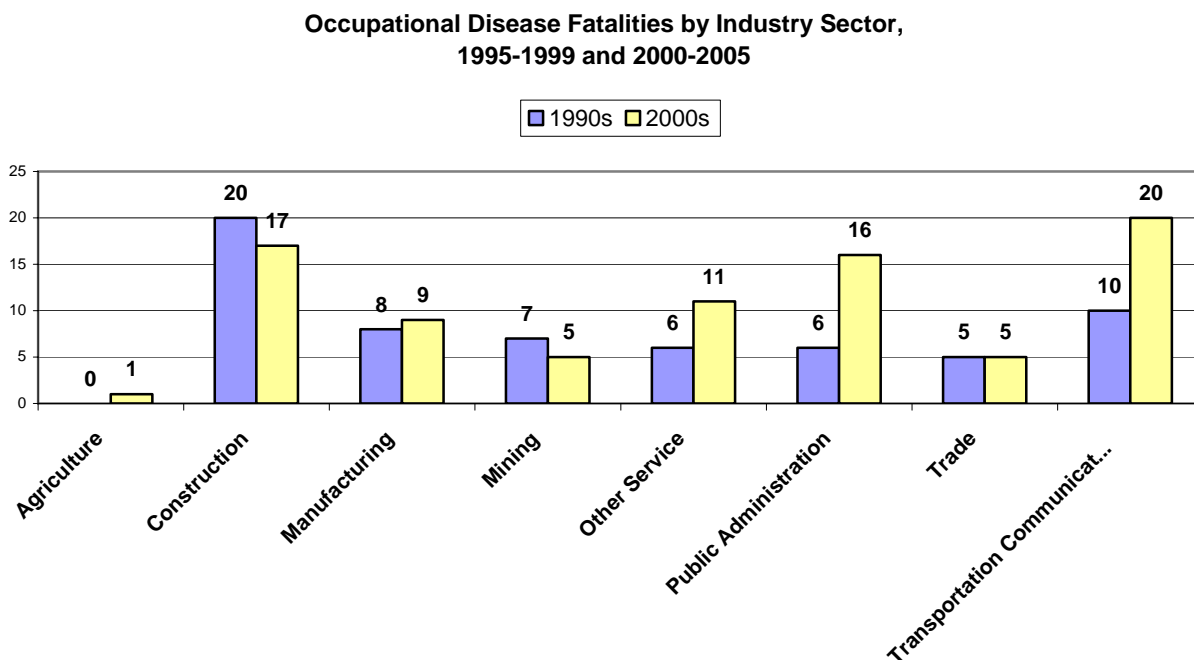
Table 5 outlines patterns of *occupational disease* fatalities by year of acceptance. No discernable trends have emerged.

¹⁰ Only *occupational disease* fatalities accepted by the WCB are included in this report. These fatalities are recorded by year of acceptance.

Table 5

Occupational Disease Fatalities by Sector, 1995-2005													
Sector	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total	Mean per year
Agriculture	0	0	0	0	0	1	0	0	0	0	0	1	0.1
Construction	1	5	5	5	4	3	5	3	3	2	1	37	3.4
Manufacturing	1	4	2	1	0	3	1	2	2	1	0	17	1.5
Mining	3	1	1	1	1	0	1	0	0	1	3	12	1.1
Other Service	1	3	1	0	1	1	2	1	2	0	5	17	1.5
Public Admin	1	1	2	2	0	2	2	1	8	0	3	22	2.0
Trade	2	1	0	2	0	1	3	0	0	0	1	10	0.9
Transportation Communications and utilities	3	3	0	0	4	2	3	2	4	5	4	30	2.7
Total	12	18	11	11	10	13	17	9	19	9	17	146	13.3

Figure 11



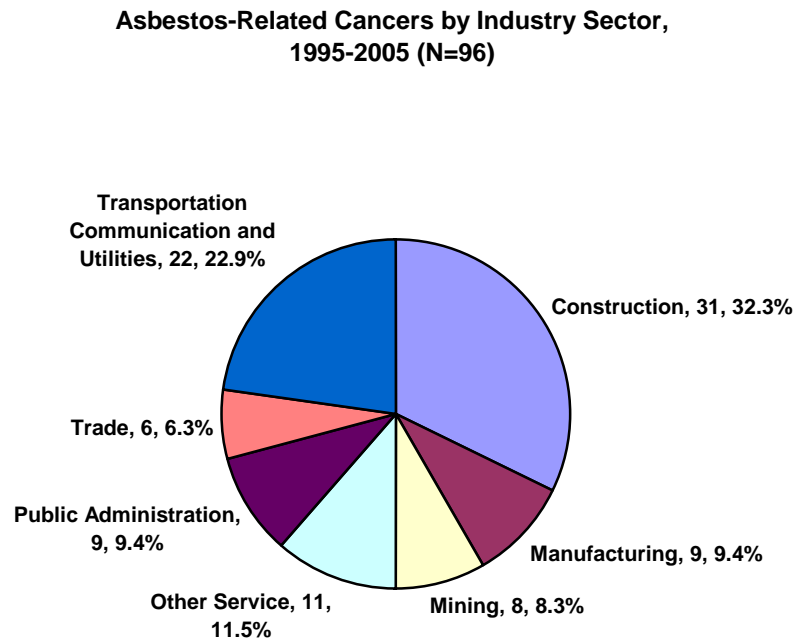
Between 1995 and 2005, the average number of *occupational disease* fatalities was 13 annually.

Figure 11 indicates that the number of *occupational disease* fatalities in the construction sector declined slightly from 20 deaths in the last five years of the 1990s to 17 in the first six years of the 2000's. Meanwhile, the number of

occupational disease fatalities in the transportation, communication and utilities sector increased from 10 to 20 over these two time periods. This was mainly due to disease-related deaths in the utilities sector. In addition, the public administration sector also recorded an increase in the number of *occupational disease* fatalities in these periods, from 6 to 16. The increase in the public sector was due predominately to the change in presumptive legislation for fire fighters.¹¹ While the other service sector increased from 6 to 11, there was no discernable pattern in any particular sub-sector.

Between 1995 and 2005, 96 *occupational disease* fatalities were the result of exposure to asbestos fibers. The construction sector recorded the largest number of these deaths (31 deaths or 33%), followed by the transportation, communication and utilities sector (24 deaths or 24%) and the other service sector (11 deaths or 11%) (Figure 12).

Figure 12



¹¹ Legislation passed in 2002 and 2005 presumes that certain cancers and injuries to the heart are *occupational diseases* of firefighting. This change has resulted in an increase in the number of reported and accepted fire fighter related occupational disease claims.

Appendix 1

2005 Acute-Hazard and Occupational Disease Deaths

Acute-Hazard Deaths			
Month of Death (2005)	Industry	Circumstances	Occupation
February	Agriculture	Unloading a Caterpillar which slid off semi-trailer and crushed worker	Equipment Operator
April	Agriculture	Tractor/ Loader: Crushed by unsecured round hay bale	Farmer
April	Agriculture	Crushed by cattle	Farmer
April	Transportation Communication and Utilities	Fall from Height	Telecommunications Worker
May	Agriculture	Lowered hydraulic bale shredder and unaware person was underneath	Farmer
May	Construction	Contact with power lines while operating boom to unload truck	Labourer
May	Fishing	Drowned while fishing	Fisher
May	Fishing	Drowned while fishing	Fisher
June	Fishing	Drowned while fishing	Fisher
June	Fishing	Drowned while fishing	Fisher
June	Other Service Industry	Contact with electric current	Maintenance Technician
June	Forestry	Machinery Contact: Repairing Winch	Wood Cutter
July	Transportation Communication and Utilities	Motor vehicle accident	Truck driver
August	Agriculture	Fell off tractor and struck ground	Farmer
September	Manufacturing	Machinery Contact: Caught in/ under truck box	Assembler
October	Transportation Communication and Utilities	Airplane crash	Pilot
November	Transportation Communication and Utilities	Motor Vehicle Accident	Truck driver
November	Transportation Communication and Utilities	Homicide while working	Taxi Driver

Appendix 1

2005 Acute-Hazard and Occupational Disease Deaths

Occupational Disease Deaths¹²			
Date of Death	Industry	Circumstances	Occupation
July 2003	Transportation Communication and Utilities	Exposure to asbestos: asbestosis	Machinist
December 2003	Public Administration	Exposure to smoke: other cancer	Fire fighter
May 2004	Other Service Industry	Silicosis	Dental technician
September 2004	Mining	Exposure to asbestos: asbestosis	Miner
September 2004	Construction	Exposure to asbestos: asbestosis	Carpenter
November 2004	Trade	Exposure to asbestos: mesothelioma	Boiler Maker
December 2004	Other Service Industry	Contracted Hepatitis C from blood transfusion to treat burns	Chemist
January 2005	Transportation Communication and Utilities	Exposure to asbestos: mesothelioma	Pipe Fitter
February 2005	Other Service Industry	Died a significant time after injury from complications to original head trauma injury	Billiard Hall Attendant
February 2005	Transportation Communication and Utilities	Exposure to asbestos: asbestosis	Boiler Maker
March 2005	Mining	Inhaled dust: chronic obstructive lung disease	Labourer
March 2005	Transportation Communication and Utilities	Exposure to asbestos: asbestosis	Pipe Fitter
April 2005	Public Administration	Exposure to smoke: other cancer	Fire Fighter
April 2005	Other Service Industry	Died a significant time after injury from complications to original head trauma injury	Security Guard
May 2005	Mining	Exposure to asbestos: asbestosis	Mechanic
July 2005	Public Administration	Exposure to asbestos: mesothelioma	Carpenter
October 2005	Other Service Industry	Exposure to asbestos: mesothelioma	Plumber-Oil burner mechanic

¹² These *occupational disease* deaths were accepted by the Manitoba WCB in 2005