



Hand injuries in the Oilfield Downhole services Industry of Alberta (2004 – 2010)

Prepared for the Petroleum Services Association of Canada
Commissioned by Enform Canada

Introduction

The series of reports included here comprises an investigation of hand injuries in the Downhole Services industry of Alberta from 2004 to 2011. The Enform level 2 industry reports examining hand injuries included here were generated based on queries made to the Enform Injury and Illness database. The Enform Injury and Illness database is primarily composed of information describing injuries and illnesses occurring in the Enform funding petroleum industries of Alberta, British Columbia, and Saskatchewan collected by the Workers Compensation Boards of those provinces.

It is the intent of this series of Enform level 2 industry reports to provide information concerning hand injuries in sufficient detail to facilitate the design of effective interventions.

Enform intervention road map: It is the purpose of all injury and illness investigations to lead to the design of workplace interventions resulting in the reduction and/or the elimination of health and safety incidents.

1. Identify issues and trends of concern;
 - a. Review Enform level 1 industry report summarizing industry performance,
 - b. Form stakeholder group to select issues / trends for intervention,
 - c. Request Enform level 2 report(s) describing specific issues and trends selected and/or Enform employer report(s) describing employer specific performance.
2. Intervention design process facilitated by Enform;
 - a. Identify real world context of issues and trends described in Enform level 2 reports, and/or Enform employer reports,
 - b. Design intervention(s) and identify method of evaluating effectiveness.
3. Implement intervention.
4. Measure effect of intervention.
5. Review initiative results and, if necessary, modify to realize continuous improvement.

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Executive summary

In the seven years between 2004 and 2011 injuries to the hand accounted for 1,358 claims in the Downhole Services industry of Alberta. Hand injuries resulting in WCB claims accounted for 19.1 % of all claims and accounted for \$1,980,278.21 in claims costs and 3,964 days lost (10.3 % of total claims costs and 9.0% of total days lost).

Upon examination of hand injuries in the Downhole Services industry it was observed that hand injuries resulting from contact with objects or equipment accounted for the majority of injuries (85.6% of all hand injuries). For this reason, contact with injuries became the focus of this investigation. The number and percentage of hand injury claims associated with each event or exposure group are described in the figure below. Considering hand injuries resulting from contact with objects and equipment only, 81.7% (845 claims) were captured in three groups. The three groups identified have been considered issues of interest and have been individually described in Enform level 2 industry reports. The issues/groups identified for further investigation in Enform level 2 reports are described in table 1 below. Potential *annual* reductions realized through effective interventions addressing these issues are described in table 2 below.

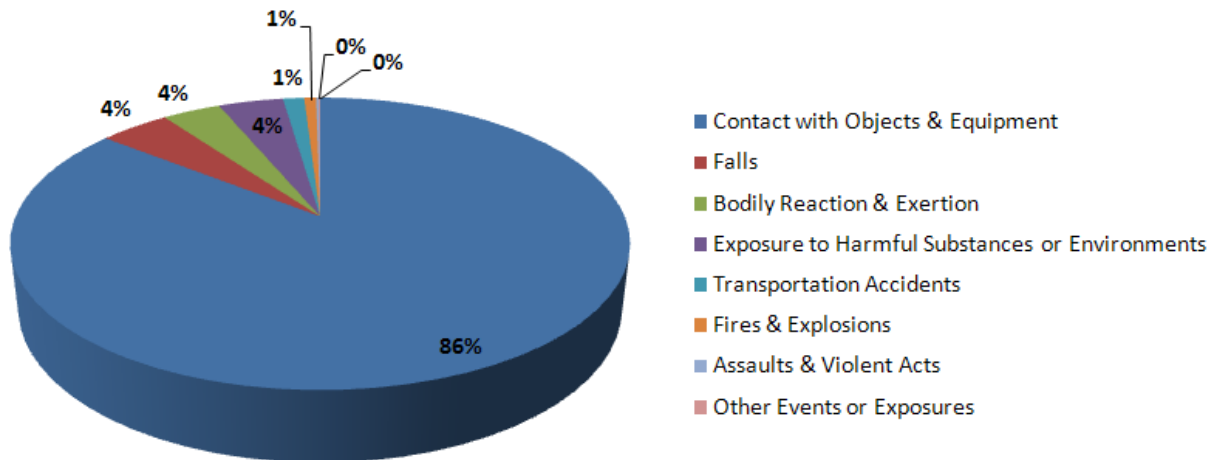


Table 1: Issues identified for further study in Enform level 2 industry reports

Rank	Issue	Number of claims (2004-2010)
1	Hand injuries resulting from contact with tools and fasteners	400 (29.5% of all hand injuries)
2	Hand injuries resulting from contact with containers, materials, and structural elements	386 (28.4% of all hand injuries)
3	Hand injuries resulting from contact with machinery	59 (4.3% of all hand injuries)

Table 2: Potential *annual* reductions realized with successful intervention

Projected	Claims per year		Lost time claim rate		Disabling injury rate		Claims costs		Time loss	
	#	%	Rate	%	Rate	%	Cost	%	Days	%
*25%	22	3.5	0.01	2.9	0.06	4.0	33,794.82	2.1	55.0	1.6
*50%	44	6.9	0.02	5.7	0.13	8.1	67,589.64	4.1	110.0	3.1
*75%	65	10.4	0.03	8.6	0.19	12.1	101,384.46	6.2	165.0	4.7

*Projected based on 2010 industrial figures



Issue 1: Hand injuries resulting from contact with tools and fasteners (2004 – 2010)

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Enform level 2 reports

Enform level 2 reports describe issues and trends observed within an industry in sufficient detail to facilitate the design of effective interventions. Given the increased complexity of information presented in level 2 reports, Enform anticipates providing assistance with interpretation.

The design of intervention is assisted by information concerning the context of the industrial activity which resulted in the injury. In an effort to provide meaningful context to the issues and trends identified in a level 2 report, each issue and/or trend is identified using a two step selection criteria. The primary factor used to identify issues for further study is the source of injury classification. The source of injury classification describes “what” has resulted in the issue or trend of concern. The secondary factor used to identify issues for further study is the event or exposure classification. The event or exposure classification describes “how” the injury was produced or inflicted.

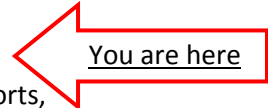
Each Enform level 2 report describes the issue or trend of concern in terms of; historical performance and impact of the issue, the characteristics of the claims (e.g., percentage of claims classified as disabling injuries), the characteristics of the injuries or illnesses (e.g., fracture of the arm), the characteristics of the injured workers (e.g., occupation of the injured worker), and temporal variables (e.g., month of occurrence).

This report is not meant to provide a description of overall health and safety performance in an industry; this is the role of Enform level 1 industry reports. Further, this report is not meant to describe employer specific performance or employer specific issues and trends of concern; this is the role of Enform employer reports. The content of Enform level 1 industry reports and Enform employer reports are described in Appendix B.



Intervention road map: It is the purpose of all injury and illness investigations to lead to the design of workplace interventions resulting in the reduction and/or the elimination of health and safety incidents.

1. Identify issues and trends of concern;
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Executive summary:

This Enform level two industry report describes hand injuries resulting from contact with tools and fasteners in the Oilfield Downhole Services industry of Alberta from 2004 to 2010. Hand injuries resulting from contact with tools and fasteners accounted for 29.5% of all hand injury claims and 5.6% of all claims in the Oilfield Downhole Services industry from 2004 to 2010. Potential annual reductions realized through effective interventions addressing this issue are described below.

Projected	Claims		Lost time claim rate		Disabling injury rate		Claims costs		Time loss	
	#	%	Rate	%	Rate	%	Cost	%	Days	%
*25%	11	1.7	0.00	1.2	0.03	1.9	12,125.76	0.7	20.0	0.6
*50%	21	3.3	0.01	2.5	0.06	3.7	24,251.52	1.5	40.0	1.1
*75%	32	5.0	0.01	3.7	0.09	5.6	36,377.28	2.2	60.0	1.7

*Projected based on 2010 industrial figures

Performance

Issue specific performance as measured by the lost time claim rate has remained relatively constant across the years examined and has not declined with the overall lost time claim rate. The percentage of the lost time claim rate accounted for by hand injuries resulting from contact with tools and fasteners has increased from a low of 1.2% in 2005 to a high of 5.0% in 2010. Issue specific performance as measured by the disabling injury rate has been variable during the period examined and has accounted for an average of 6.2% of the overall disabling injury rate.

Claims cost and time loss

Hand injuries due to contact with tools and fasteners accounted for \$504,712.80 in claims costs and 803 days lost during the period examined. Hand injuries resulting from contact with tools and fasteners accounted for 2.6% of all claims costs and 1.8% of all time loss.

Injury characteristics

The most common injuries resulting from contact with tools and fasteners were fractures, cuts, bruises, and crush injuries.

Injured worker characteristics

Male workers between the ages of 20 and 34 were most commonly injured due to contact with tools and fasteners. Workers with 1-6 months of work experience accounted for 28.5% of injuries due to contact with tools and fasteners.

Time of injury

Hand injuries due to contact with tools and fasteners most often occurred in the two month periods between January - February and August - September. In terms of time of day, hand injuries due to contact with tools and fasteners most often occur between 9:00 and 11:00 am.



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Hand injuries resulting from contact with tools and fasteners

1.0 Background

The below tables describe the source of injury and event or exposure groups considered in this report. Terms and definitions described below are defined in Appendix C.

Event or exposure groups	Source of injury groups	*Number and percentage of claims
Contact with Objects and Equipment	Handtools—nonpowered	189 (47.3% of claims)
	Other tools, instruments, and equipment	57 (14.3% of claims)
	Fasteners, connectors, ropes, ties	54 (13.5% of claims)
	Tools, instruments, and equipment, UNS	43 (10.8% of claims)
	Handtools—power not determined	35 (8.8% of claims)
	Handtools—powered	22 (5.5% of claims)
	Total	400

*Percentage of claims occurring within the issue under examination

Secondary break out of groups with greater than 50 claims

Group	Classifications considered	Number of claims	Percentage of claims
Fasteners, connectors, ropes, ties	Valve/nozzle	22	40.7
	Wire-nonelectrical	7	13.0
	Chain, NEC	6	11.1
	Fastener, NEC	4	7.4
	Nut/bolt/washer	4	7.4
	Clamp/coupling	3	5.6
	Band	2	3.7
	Fastener/connector/rope/tie, NEC	2	3.7
	Nail/brad/tack	2	3.7
	Staple	1	1.9
	Strapping	1	1.9
	Total	54	100.0
Handtools—nonpowered	Hammer	72	38.1
	Knife	33	17.5
	Sledge	31	16.4
	Wrench	21	11.1
	Handtool-nonpowered, NEC	6	3.2
	Vise/clamp	5	2.6
	Crowbar	4	2.1
	Pliers/tongs	3	1.6
	Bolt cutter	1	0.5
	Boring handtool-nonpowered, UNS	1	0.5
	Cutting handtool-nonpowered, NE	1	0.5



	Digging handtool-nonpowered, NE	1	0.5
	Drill	1	0.5
	Handtool-nonpowered, UNS	1	0.5
	Mallet	1	0.5
	Measuring handtool-nonpowered,	1	0.5
	Multiple Handtools-nonpowered	1	0.5
	Pick	1	0.5
	Pitchfork/spading fork	1	0.5
	Ruler/tape measure	1	0.5
	Saw	1	0.5
	Sharpening stone/wheel	1	0.5
	Total	189	100.0
Other tools, instruments, and equipment	Tool/instrument/equipment, NEC	54	94.7
	Firearm, NEC	1	1.8
	Pistol/handgun/revolver	1	1.8
	Shotgun	1	1.8
	Total	57	100.0

2.0 Issue specific performance and impact

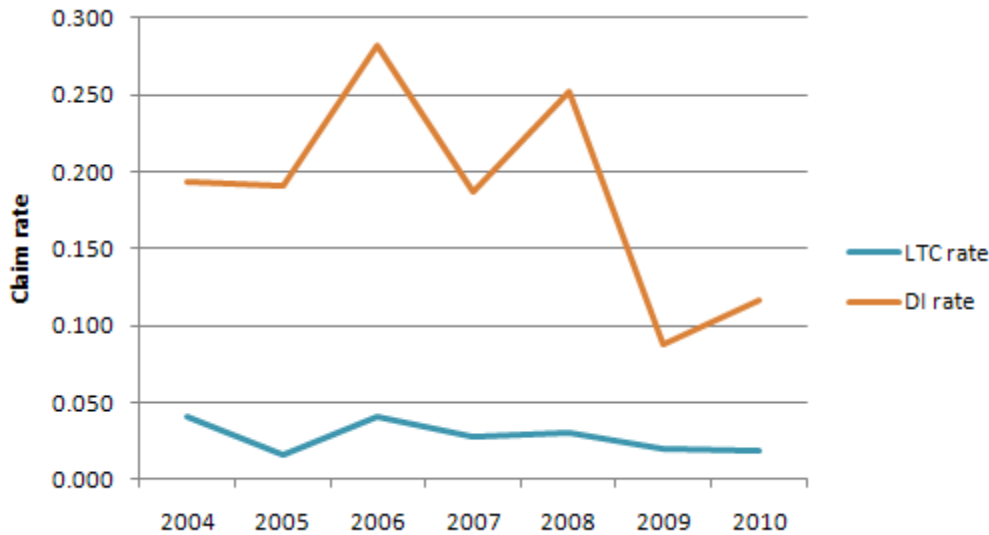
This section describes performance specific to the issue under examination as measured by the lost time claim rate and disabling injury rate. Also described in this section is the impact of the issue as assessed by the percentage of all lost time claims and disabling injury claims observed in the Oilfield Downhole Services industry accounted for by the issue under examination.

2.1 Performance

Table 1: Lost time claim and disabling injury rates due to the issue under examination

Year	Number of claims		Person years	Claim rate	
	Lost time	Disabling injury		Lost time claim	Disabling injury
2004	9	42	21,767.9	0.041	0.193
2005	4	49	25,658.7	0.016	0.191
2006	12	83	29,413.4	0.041	0.282
2007	8	54	28,953.9	0.028	0.187
2008	8	66	26,197.7	0.031	0.252
2009	5	22	24,981.9	0.020	0.088
2010	6	37	31,796.1	0.019	0.116
Total	52	353			

Figure 1: Lost time claim and disabling injury rate due to the issue under examination



2.2 Impact

Table 2: Percentage of all claims observed attributable to the issue under examination by claim type

Year	*All claims		Issue claims		Percentage of overall	
	Lost time	Disabling	Lost time	Disabling	Lost time	Disabling
2004	244	733	9	42	3.7	5.7
2005	335	1,022	4	49	1.2	4.8
2006	303	1,094	12	83	4.0	7.6
2007	273	946	8	54	2.9	5.7
2008	232	878	8	66	3.4	7.5
2009	147	462	5	22	3.4	4.8
2010	122	496	6	37	4.9	7.5
Total	1,656	5,631	52	353	3.1	6.3

*All claims: all claims observed within the industry under examination (not limited to issue under examination)

Figure 2: Percentage of lost time claims attributable to the issue under examination

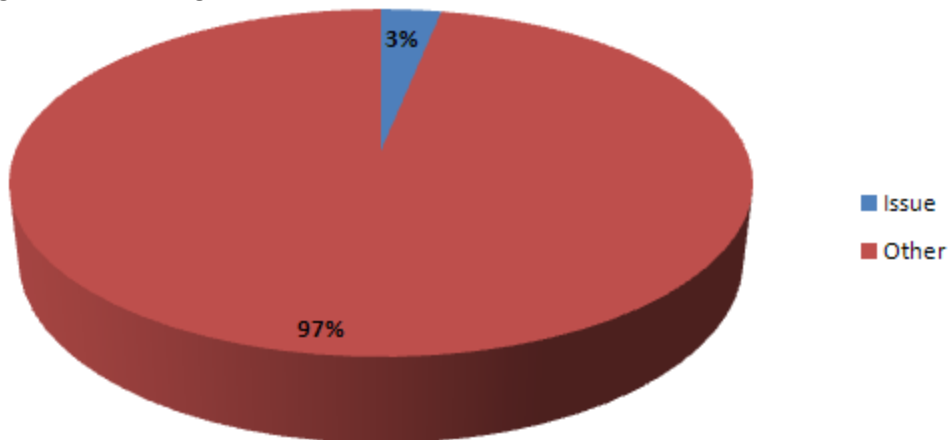
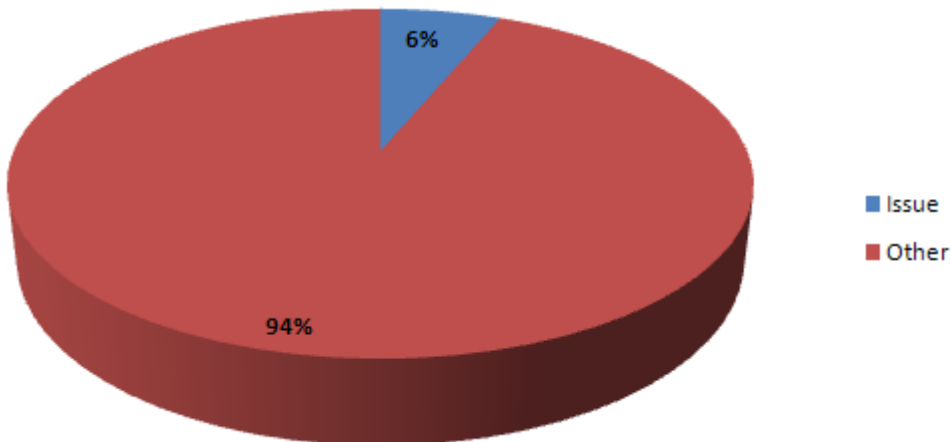


Figure 3: Percentage of disabling injury claims attributable to the issue under examination





3.0 Claim characteristics

3.1 Claim type: Disabling injuries and lost time claims

88.3% (353) of claims were classified as disabling injury claims and 13.0 % (52) were classified as lost time claims.

3.2 Claims cost and time loss

The below tables and charts describe the claims cost and time loss associated with the issue under examination. Tables in this section describes the mean (average), standard deviation, minimum and maximum cost and time loss values across all claims, considering disabling injury claims only, and considering lost time claims only.

96.0 % (384) of claims examined in this section contained information on the claims cost and time loss associated with the claim.

Table 3: Descriptive statistics describing claims costs associated with claims considered

	Claims	Mean (\$)	Standard deviation (\$)	Minimum (\$)	Maximum (\$)
All claims	384	1,314.36	3,413.54	12.00	36,573.36
Disabling injuries	341	1,399.40	3,605.75	12.00	36,573.36
Lost time claims	52	6,018.85	7,677.40	12.00	36,573.36

Table 4: Claims costs attributable to the issue under examination by year

Year	All claims (\$)	Issue claims (\$)	% of total
2004	1,833,960.46	41,449.53	2.3
2005	3,117,332.18	37,125.21	1.2
2006	3,797,546.91	118,026.58	3.1
2007	2,377,411.78	72,168.78	3.0
2008	3,911,591.96	137,809.01	3.5
2009	2,577,619.35	49,630.65	1.9
2010	1,638,455.57	48,503.04	3.0
Total	19,253,918.21	504,712.80	2.6

Figure 4: Percentage of total claims costs attributable to the issue under examination

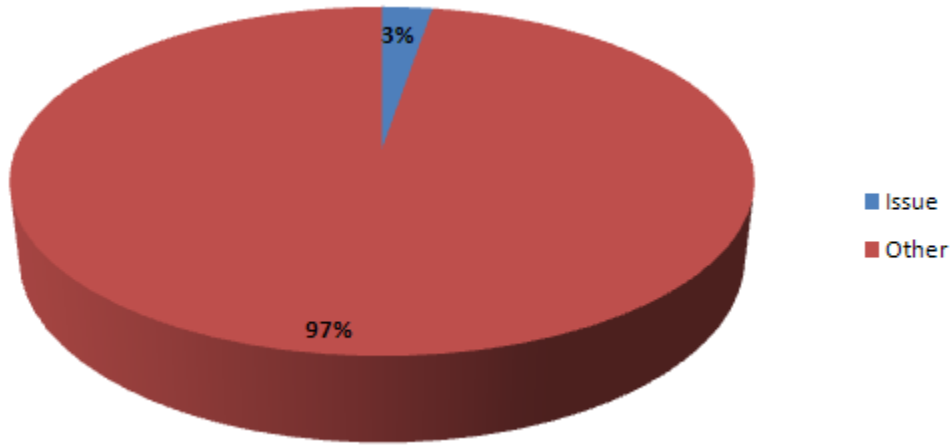


Table 5: Number of claims by cost group and claim type

Cost group	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
\$ 0.00	0	0.0	0	0.0	0	0.0
\$ 0.01-100	21	5.5	16	76.2	1	4.8
\$ 100-500	198	51.6	175	88.4	0	0.0
\$ 500-1,000	76	19.8	69	90.8	7	9.2
\$ 1,000-5,000	69	18.0	61	88.4	24	34.8
\$ 5,000-10,000	12	3.1	12	100.0	12	100.0
\$ 10,000 +	8	2.1	8	100.0	8	100.0
Total	384	100.0				

Figure 5: Distribution of claims across claims cost groups (all claims)

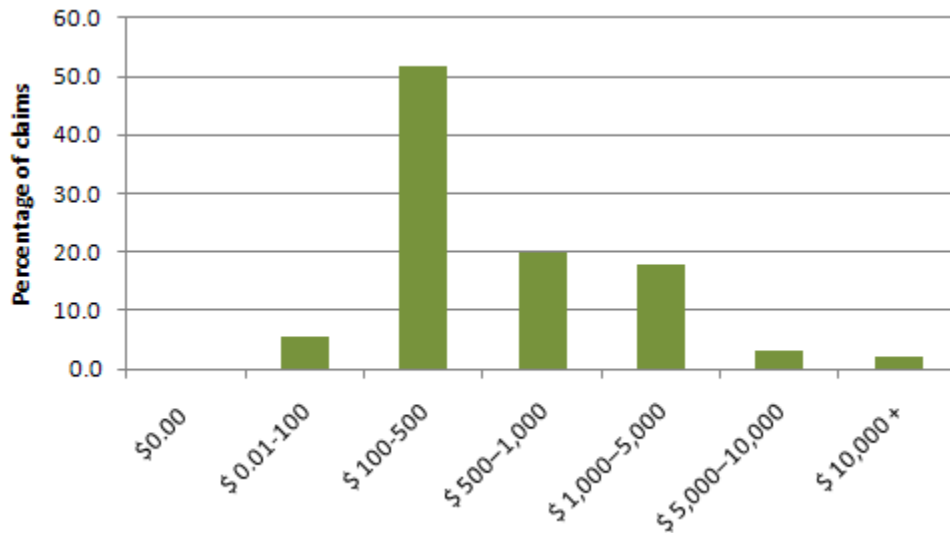


Table 6: Descriptive statistics describing time loss associated with claims considered

	Claims	Mean (days)	Standard deviation (days)	Minimum (days)	Maximum (days)
All claims	384	2.1	9.8	0.0	118.0
Disabling injuries	341	2.4	10.3	0.0	118.0
Lost time claims	52	15.4	22.5	0.0	118.0

Table 7: Time loss attributable to the issue under examination by year

Year	All claims (days)	Issue claims (days)	% of total
2004	5,548	80	1.4
2005	8,522	27	0.3
2006	7,180	249	3.5
2007	7,146	134	1.9
2008	6,896	195	2.8
2009	5,182	38	0.7
2010	3,542	80	2.3
Total	44,016	803	1.8

Figure 6: Percentage of total time loss attributable to the issue under examination

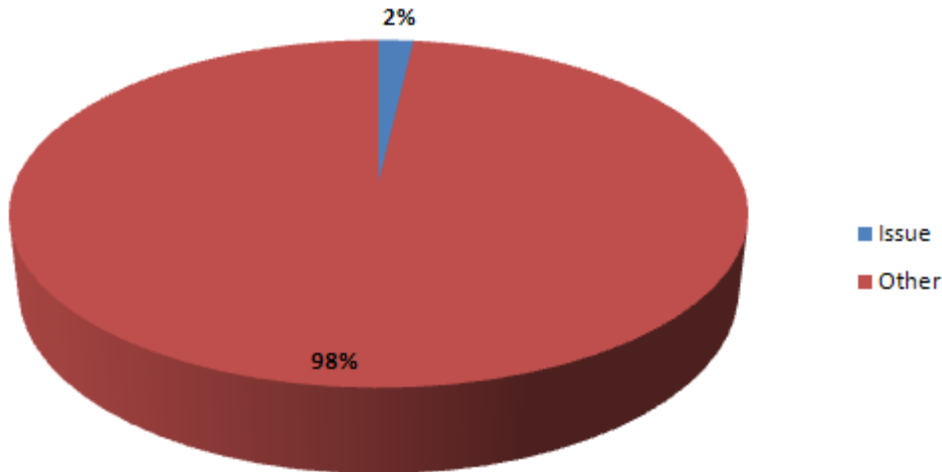
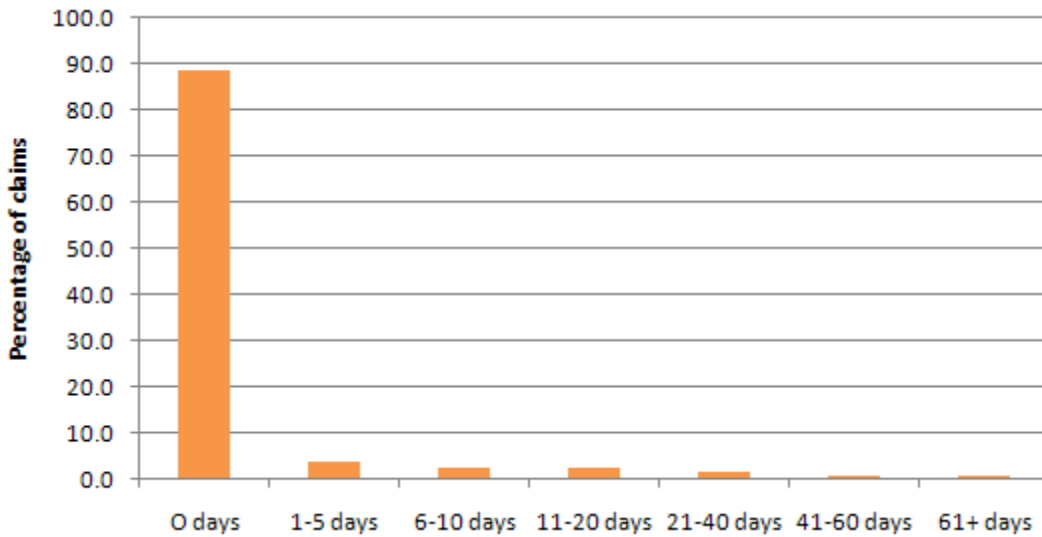


Table 8: Number of claims by time loss group and claim type

Time loss group	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
0 days	340	88.5	297	87.4	8	2.4
1-5 days	14	3.6	14	100.0	14	100.0
6-10 days	9	2.3	9	100.0	9	100.0
11-20 days	10	2.6	10	100.0	10	100.0
21-40 days	6	1.6	6	100.0	6	100.0
41-60 days	2	0.5	2	100.0	2	100.0
61+ days	3	0.8	3	100.0	3	100.0
Total	384	100.0				

Figure 7: Distribution of claims across time loss groups (all claims)



4.0 Characteristics of the injury or illness

This section describes the characteristics of the injuries or illnesses resulting from the source of injury and event or exposure classification under examination. The first sub section describes the principal physical characteristics of the injury or illness (nature of injury). The second sub section describes the part or part(s) of the body which are most commonly injured. Definitions of the nature of injury and part of body classifications referred to within the tables and charts in this section are defined in the Appendix C.

4.1 Nature of injury

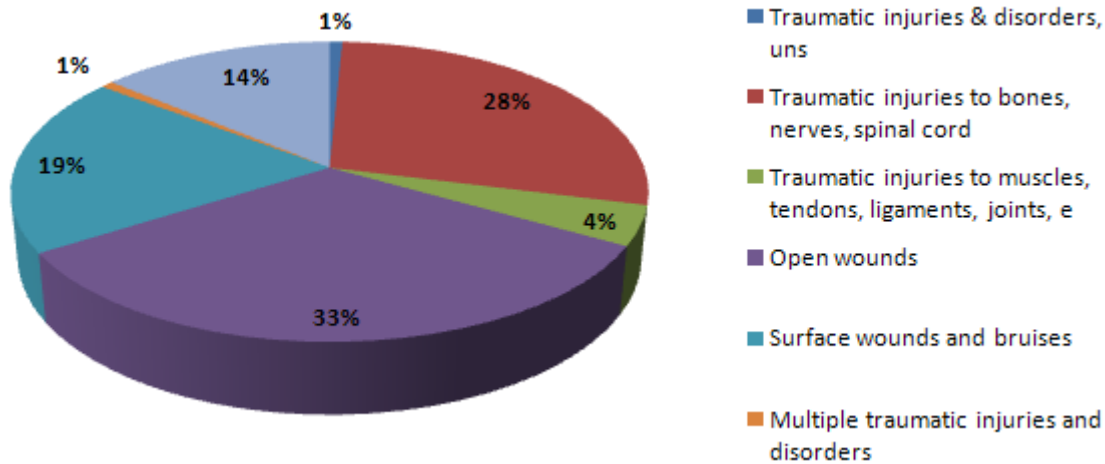
99.3 % (397) of the claims examined in this section contained information on the nature of injury.

Table 9: Most common nature of injury classifications

Major group	Minor group	All claims		Disabling injuries		Lost time claims	
		#	% total	#	% claims	#	% claims
Traumatic injuries & disorders, uns	Traumatic injuries & disorders, UNS	3	100.0	2	66.7		0.0
	Group Total	3	100.0				
Traumatic injuries to bones, nerves, spinal cord	Traumatic injuries to bones, nerves, spinal cord	1	0.9	0	0.0		0.0
	Dislocations	2	1.8	2	100.0		0.0
	Fractures	109	97.3	95	87.2	21	19.3
	Group Total	112	100.0				
Traumatic injuries to muscles, tendons, ligaments, joints, e	Traumatic injury to muscles, ligaments, joints, etc. UNS	1	5.9	1	100.0		0.0
	Sprains, strains, tears, UNS	16	94.1	14	87.5		0.0
	Group Total	17	100.0				
Open wounds	Open wounds, UNS	1	0.8	1	100.0		0.0
	Amputations, UNS	3	2.3	3	100.0	3	100.0
	Amputations, fingertip	3	2.3	3	100.0	2	66.7
	Avulsions	3	2.3	2	66.7	1	33.3
	Cuts, lacerations	113	86.9	101	89.4	9	8.0
	Punctures, except bites	5	3.8	3	60.0		0.0
	Open wounds, NEC	2	1.5	1	50.0		0.0
	Group Total	130	100.0				
Surface wounds and bruises	Bruises, contusions	77	100.0	69	89.6	4.0	5.2
	Group Total	77	100.0				
Multiple traumatic injuries and disorders	Cuts, abrasions, bruises	2	66.6	2	100.0	1.0	50.0
	Fractures and other injuries	1	33.3	1	100.0	1	100.0
	Group Total	3	100.0				

Other traumatic injuries and disorders	Crushing injuries	53	96.4	49	92.5	9	17.0
	Soreness, pain, hurt, except the back	1	1.8	1	100.0		0.0
	Non specified injuries and disorders, NEC	1	1.8	1	100.0		0.0
	Group Total	55	100.0				

Figure 8: Percentage of claims by nature of injury group (all claims)



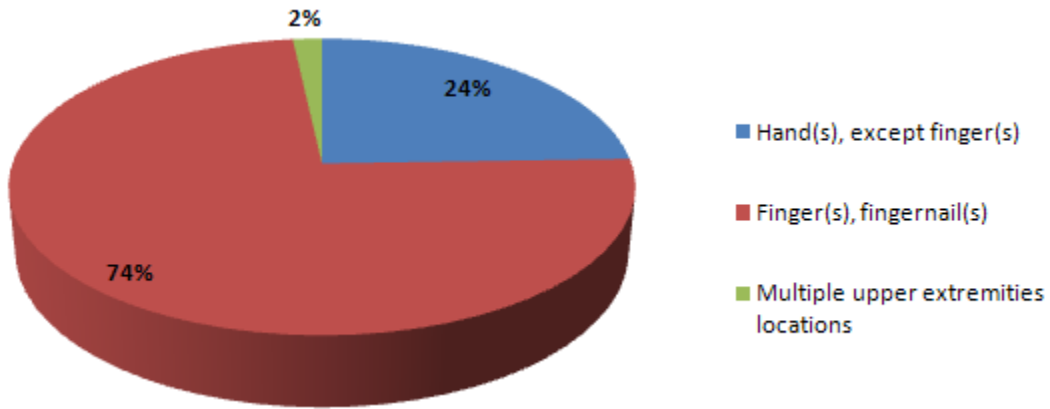
4.2 Part of body injured

100 % (400) of claims examined in this section contained information on the part of body injured.

Table 10: Most common part of body classifications

Major group	Minor group	All claims		Disabling injuries		Lost time claims	
		#	% total	#	% claims	#	% claims
Hand(s), except finger(s)	Hand(s), except finger(s)	98	100	86	87.8	8	8.2
	Group Total	98	100				
Finger(s), fingernail(s)	Finger(s), fingernail(s), UNS	73	24.7	69	94.5	15	20.5
	Thumb or thumb and other finger(s)	53	17.9	45	84.9	5	9.4
	Finger(s), except thumb	169	57.3	147	87.0	22	13.0
	Group Total	295	100				
Multiple upper extremities locations	Hand(s) and finger(s) or thumb(s)	6	85.7	5	83.3	2	33.3
	Hand(s) and wrist(s)	1	14.3	1	100.0	0	0.0
	Group Total	7	100				

Figure 9: Percentage of claims by part of body injured group (all claims)



5.0 Characteristics of the injured workers

This section describes the characteristics of the workers injured from the issue under examination. Characteristics examined in this section include; the gender, age, experience (years worked before injury), and occupation of the injured workers.

5.1 Gender

100.0 % (400) of claims examined in this section contained information on the gender of the injured worker.

97.0 % (388) of the workers injured due to the issue under examination were male and 2.0 % (8) were female.

Table 11: Number of claims by gender and claim type

Gender	All claims		Disabling injuries		Lost time claims	
	#	% claims	#	% claims	#	% claims
Female	8	2.0	6	75.0	0	0.0
Male	388	97.0	343	88.4	50	12.9
Not elsewhere classified	4	1.0	4	100.0	2	50.0
Total	400	100.0				

5.2 Age

100.0% (400) of claims examined in this section contained information on the age of the injured worker.

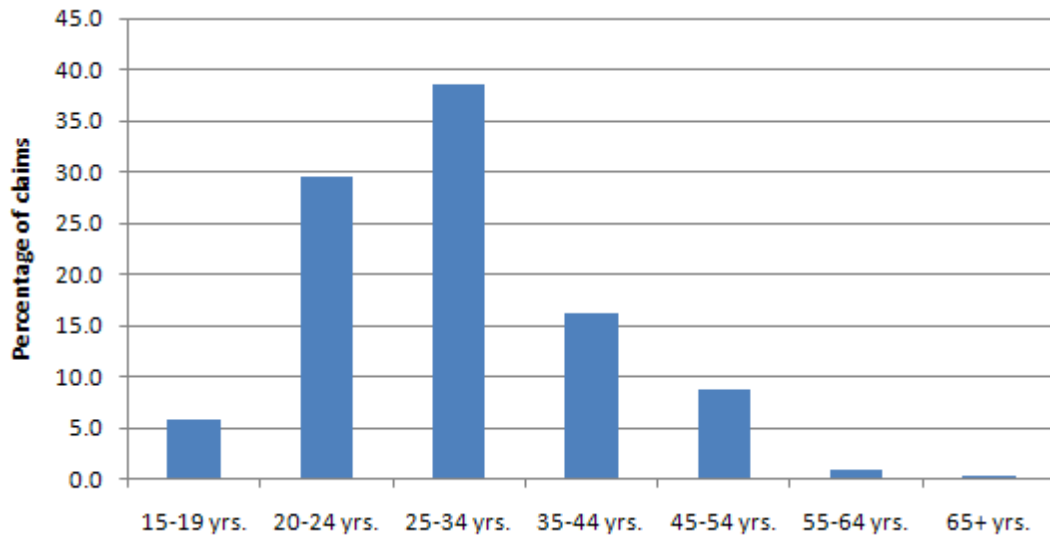
Table 12: Descriptive statistics describing age of the injured workers considered

	Claims	Mean (yrs.)	Standard deviation (yrs.)	Minimum (yrs.)	Maximum (yrs.)
All claims	400	29.9	9.3	15	68
Disabling injuries	353	29.9	9.4	15	68
Lost time claims	52	32.0	12.1	20	68

Table 13: Number of claims by age group and claim type

Age group	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
15-19 yrs.	23	5.8	16	69.6	0	0.0
20-24 yrs.	118	29.5	110	93.2	19	16.1
25-34 yrs.	154	38.5	132	85.7	16	10.4
35-44 yrs.	65	16.3	59	90.8	9	13.8
45-54 yrs.	35	8.8	31	88.6	4	11.4
55-64 yrs.	4	1.0	4	100.0	3	75.0
65+ yrs.	1	0.3	1	100.0	1	100.0
Total	400	100.0				

Figure 10: Distribution of claims across age groups (all claims)



5.3 Experience

41.3 % (165) of claims examined in this section contained information on the experience of the injured worker. Experience information is presented as years worked before the injury.

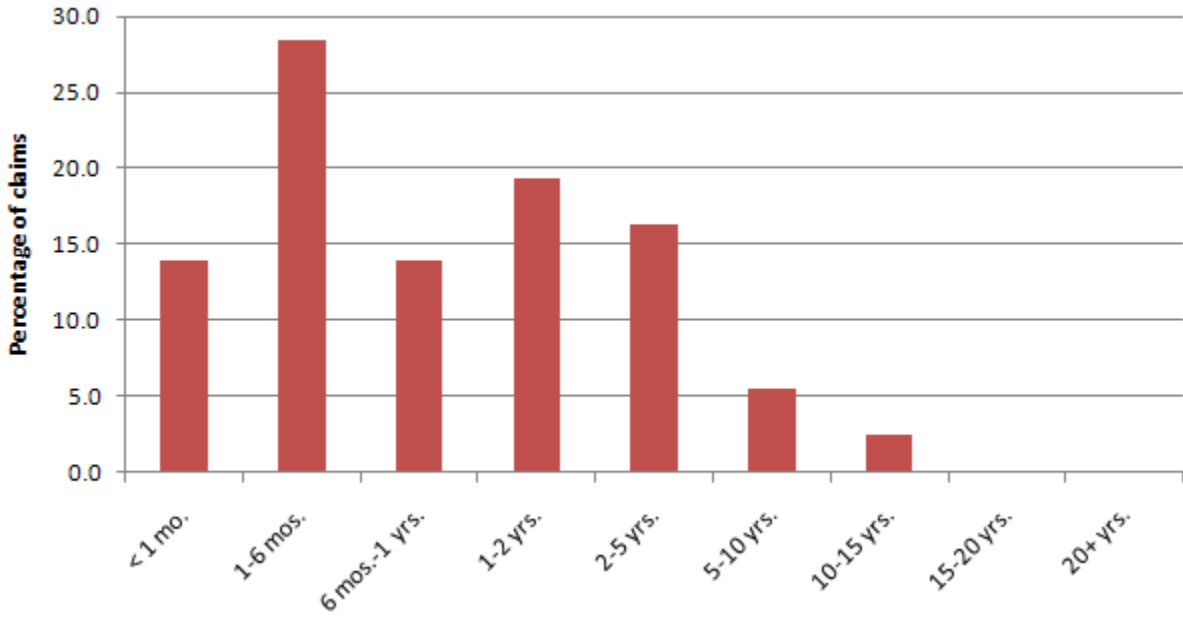
Table 14: Descriptive statistics describing experience of the injured workers considered

	Claims	Mean (yrs.)	Standard deviation (yrs.)	Minimum (yrs.)	Maximum (yrs.)
All claims	165	1.5	2.1	0.0	10.7
Disabling injuries	151	1.5	2.1	0.0	10.7
Lost time claims	34	2.0	2.7	0.0	10.6

Table 15: Number of claims by experience group and claim type

Experience group	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
< 1 mo.	23	13.9	22	95.7	4	17.4
1-6 mos.	47	28.5	43	91.5	9	19.1
6 mos.-1 yrs.	23	13.9	22	95.7	3	13.0
1-2 yrs.	32	19.4	28	87.5	8	25.0
2-5 yrs.	27	16.4	24	88.9	5	18.5
5-10 yrs.	9	5.5	8	88.9	3	33.3
10-15 yrs.	4	2.4	4	100.0	2	50.0
15-20 yrs.	0	0.0	0	0.0	0	0.0
20+	0	0.0	0	0.0	0	0.0
Total	165	100.0				

Figure 11: Distribution of claims across experience groups (all claims)





5.4 Occupation of the injured worker

100.0 % (400) of claims examined in this section contained information on the occupation of the injured worker.

Table 16: Number of claims by occupation of the injured worker and claim type

Occupation	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
Oil & Gas Drilling, Svc Related Workers	54	13.5	46	85.2	6	11.1
Truck Drivers	44	11.0	41	93.2	5	11.4
Oil & Gas - Drilling/Service Workers	43	10.8	40	93.0	6	14.0
Not yet classified	30	7.5	27	90.0	3	10.0
Heavy Equip Operators (Except Crane)	26	6.5	22	84.6	6	23.1
Oil & Gas Drilling & Svc Workers	21	5.3	20	95.2	2	9.5
Sups, Heavy Const Equip Crews	15	3.8	15	100.0	5	33.3
Other Workers in Proc, Mfg & Utilities	12	3.0	11	91.7	2	16.7
Underground Mine Support Workers	12	3.0	11	91.7	2	16.7
Other Trades Helpers & Labourers	10	2.5	8	80.0	0	0.0

6.0 Temporal variables: Month of year and time of day

This section describes the month of the year and time of day the injuries occurred from the issue under examination.

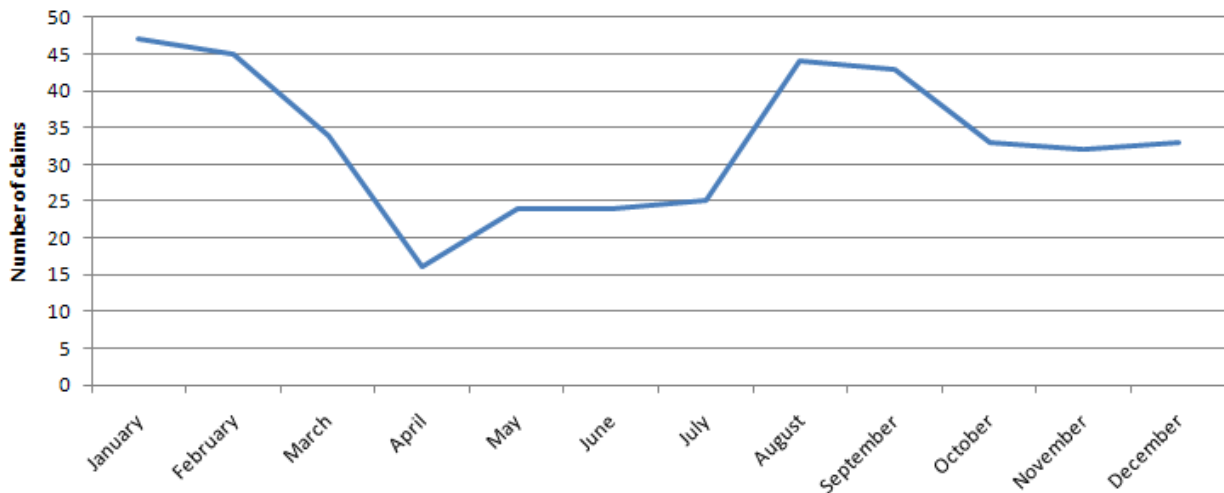
6.1 Month of occurrence

100.0 % (400) of claims examined in this section contained information on the month of occurrence.

Table 17: Number of claims by month of occurrence and claim type

Month	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
January	47	11.8	45	95.7	14	29.8
February	45	11.3	40	88.9	3	6.7
March	34	8.5	29	85.3	1	2.9
April	16	4.0	15	93.8	3	18.8
May	24	6.0	23	95.8	1	4.2
June	24	6.0	17	70.8	3	12.5
July	25	6.3	24	96.0	3	12.0
August	44	11.0	37	84.1	8	18.2
September	43	10.8	38	88.4	8	18.6
October	33	8.3	28	84.8	2	6.1
November	32	8.0	26	81.3	1	3.1
December	33	8.3	31	93.9	5	15.2
Total	400	100.0				

Figure 12: Number of claims by month of the year (all claims)



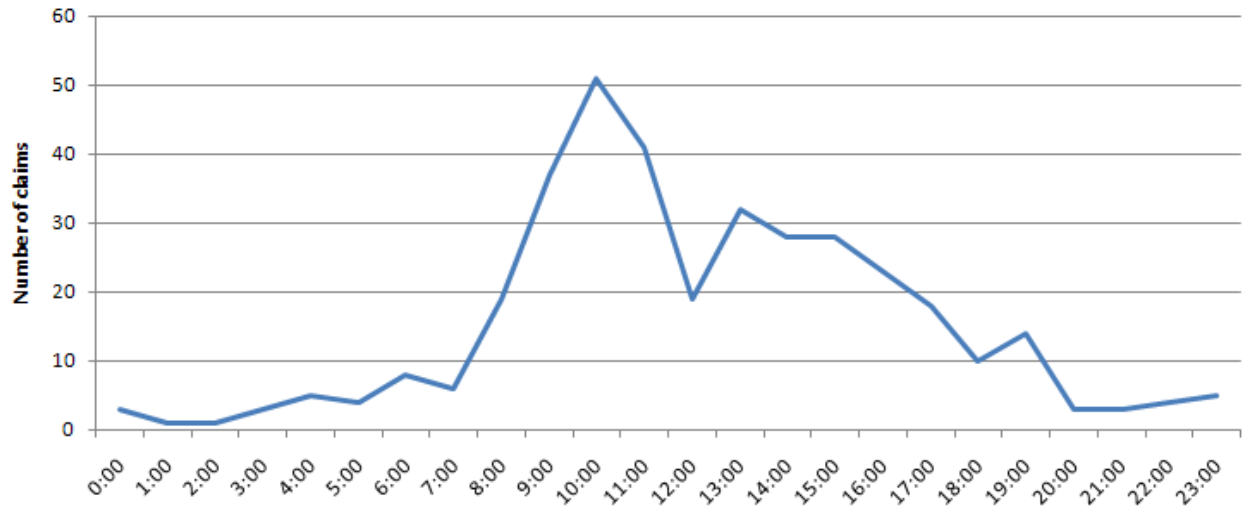
6.2 Hour of the day

91.5 % (366) of claims examined in this section contained information on the hour of occurrence.

Table 18: Number of claims by hour of occurrence and claim type

Hour	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
0:00	3	0.8	2	66.7	1	33.3
1:00	1	0.3	1	100.0	0	0.0
2:00	1	0.3	1	100.0	0	0.0
3:00	3	0.8	3	100.0	0	0.0
4:00	5	1.4	5	100.0	0	0.0
5:00	4	1.1	2	50.0	0	0.0
6:00	8	2.2	7	87.5	2	25.0
7:00	6	1.6	6	100.0	0	0.0
8:00	19	5.2	16	84.2	3	15.8
9:00	37	10.1	36	97.3	2	5.4
10:00	51	13.9	45	88.2	6	11.8
11:00	41	11.2	35	85.4	4	9.8
12:00	19	5.2	14	73.7	2	10.5
13:00	32	8.7	30	93.8	4	12.5
14:00	28	7.7	25	89.3	7	25.0
15:00	28	7.7	26	92.9	3	10.7
16:00	23	6.3	21	91.3	2	8.7
17:00	18	4.9	16	88.9	3	16.7
18:00	10	2.7	9	90.0	2	20.0
19:00	14	3.8	12	85.7	3	21.4
20:00	3	0.8	2	66.7	1	33.3
21:00	3	0.8	2	66.7	0	0.0
22:00	4	1.1	4	100.0	1	25.0
23:00	5	1.4	4	80.0	0	0.0
Total	366	100.0				

Figure 13: Number of claims by hour of occurrence (all claims)





Appendix A: General information pertaining to this report

- All claims associated with industry and employer accounts accepted by the WCB in the years examined are included in the Enform Injury and Illness Database used to generate this report. Claim types described in this report include; medical aid claims and lost time claims.
- WCB claims included in the disabling injury claim category include; medical aid claims which involve modified work, modified work only claims, and lost time claims without modified work.
- Claims included in the lost time claim category include lost time claims which involve modified work and those which do not involve modified work.
- Given the lost time claim group includes claims with and without modified work, the disabling injury claim group and lost time claim group are not mutually exclusive (some claims are considered in both groups).
- Recurrent incidences of the same injury or illness resulting in a claim within individuals are not considered separate claims in this report. Recurrence of the same injury within an individual results in the original claim being reactivated. Multiple different injuries resulting in claims within an individual are considered separate claims.
- Costs and time loss figures reported here reflect the claims costs and time loss days accrued from January 1 of the year of occurrence to March 31 of the following year. A 15 month collection window has been used to limit the ability of claims occurring in earlier years to accrue more claims costs and time loss than claims occurring in subsequent years.
- The reliability of a statistic or trend is affected by the number of data points (claims) considered in generating the statistic or trend. As a general rule, 30 data points (claims) are required to arrive at a stable trend or statistic. A description of the number of claims considered in statistics and trends reported is included in each section of this report to enable the reader to assess the strength of conclusions that may be drawn.
- In an effort to maximize reliability issues and trends identified in this report, all claims are considered across the period examined and not each year individually.
- Employer size comparisons are based on person year estimates calculated using the WCB of industry average wage figure.

$$\text{Person years} = \frac{\text{WCB Total insurable earnings}}{\text{WCB Industry average wage} \times 2,000 \text{ hours}}$$



Appendix B: Content of Enform Level 1 industry and Enform employer reports

Intervention road map

1. Identify issues and trends of concern;
 - a. Review Enform level 1 industry report summarizing industry performance,
 - b. Form stakeholder group to select issues / trends for intervention,
 - c. Request Enform level 2 report(s) describing specific issues and trends selected, and/or Enform employer report(s) describing employer specific performance.
2. Intervention design process facilitated by Enform;
 - a. Identify real world context of issues and trends described in Enform level 2 reports, and/or Enform employer reports,
 - b. Design intervention(s) and identify method of evaluating effectiveness.
3. Implement intervention.
4. Measure effect of intervention.
5. Review initiative results and, if necessary, modify to realize continuous improvement.

Enform level 1 industry reports

Enform level 1 industry reports summarize health and safety performance across the industry examined. It is the purpose of Enform level 1 industry reports to provide a description of overall health and safety performance and identify issues and trends for further study in partnership with stakeholders.

Enform level 1 industry reports describe; the industrial activity taking place (e.g., number of employers, total insurable earnings), claims experience (e.g., number of claims and classification of claims, time loss, claims cost), characteristics of the injured workers (e.g., gender, age, experience, occupation), and information on the characteristics of the injuries themselves (e.g., part of body injured). Issues and trends of concern identified for further study in Enform level 2 industry reports are also described. Enform level 1 industry reports are available by contacting Enform.

Enform employer reports

Enform employer reports reveal important information concerning health and safety performance within an individual employer. It is the purpose of Enform employer reports to provide insight into how the issues and trends observed within an individual employer compare to the issues and trends observed across employer's peer group (industry). Enform employer reports describe the comparative performance of an employer and highlight circumstances where trends observed differ significantly between the employer and their peer group.



Each Enform employer report describes health and safety performance within an individual employer in terms of; claims experience (e.g., rank of employer within peer group), characteristics of workers (e.g., average age of injured worker employer vs. peer group), and characteristics of injuries and illnesses (most common part of body injured employer vs. peer group). A sample Enform employer report is available by contacting Enform.

Appendix C: Key terms and definitions

Claims cost per person year	Claims cost per person year is calculated by dividing the total claims cost by the total person years worked.
Duration rate (AEI definition)	The duration rate is calculated by dividing the number of workdays-lost (disability days) by the person-year estimate, and multiplying by 100. The result is expressed as days-lost per 100 person-years worked, and indicates, in part, the economic impact of occupational injury and disease. Duration rates are not recommended as reliable indicators of full economic cost. In addition, readers are warned that duration rates are highly unstable when based on only a few lost-time claims; it is recommended that the duration rate not be calculated based upon fewer than 30 lost-time claims.
First aid (WCB Alberta Policy manual definition)	<p>First aid is limited to a one-time treatment, with follow-up visit if needed, for observation purposes only, of injuries such as minor cuts, scrapes, scratches, treatment of minor burns, removing splinters, etc., or other minor injuries which do not require medical treatment beyond the date of accident.</p> <p>First aid is the type of treatment performed regardless of who performs the treatment. In most cases, first aid treatment is provided by a first aid practitioner. However, there may be situations when first aid treatment is provided by a physician or at a medical facility. These possibilities are more likely when:</p> <ul style="list-style-type: none"> • the hospital or health facility is the workplace, • the employer has on-site health care practitioners and health facilities, • the employer has specific contracts with health care facilities to provide first aid and health care to their workers. <p>If the professional skills of a health care professional are required, and a first aid practitioner could not have provided the care and evaluation, the treatment is not first aid and should be reported to the WCB.</p>
Lost time claim (AEI definition)	A lost time claim (LTC) is a claim for an occupational injury or disease that causes the worker to have time away from work beyond the day of injury. Included are claims receiving reimbursement of full or partial lost wages due to occupational illness or injury, or payment for permanent loss of function.
Median	The numeric value separating the higher half of distribution of numbers from the lower half.
Medical aid (WCB Alberta Policy manual definition)	<p>Medical aid includes medical and other services provided by a person licensed to practice the healing arts in Alberta, and nursing, hospitalization, drugs, dressing, x-ray treatment, special treatment, appliances, apparatuses, transportation, and any other matters and things that the Board authorizes or provides.</p> <p>Coverage is also extended when an accident results in the loss, damage, or breakage of an artificial limb, eyeglasses, dentures, etc.</p> <p>Medical aid that is considered first aid does not need to be reported to the WCB.</p>
Qualified Age	Age groups with greater than 30 claims.
Group Severity	Severity is defined by the ratio of lost time claims to medical aid claims in Alberta, the ratio of no time loss claims to time loss claims in Saskatchewan, and the ratio of serious injury claims to non serious injury claims in British Columbia.



**Standard
Deviation**

A statistical metric which describes how much variation there is from the "average" or "mean" value. A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data is spread out over a large range of values.

References:

CSA Z795 definitions have been reproduced with the permission of CSA Standards from **CSA Z795-03 (R2008) - Coding of Work Injury or Disease Information** which is copyrighted by CSA Standards, 5060 Spectrum Way, Suite 100, Mississauga, ON L4W 5N6. While use of this material has been authorized, CSA shall not be responsible for the manner in which the information is presented, nor for any interpretations thereof.

National Occupational Classification, accessed via the internet on November 26, 2009, <http://www5.hrsdc.gc.ca/NOC/English/NOC/2006/Welcome.aspx>, Department of Human Resources and Skills Development Canada. Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2009.



Issue 2: Hand injuries resulting from contact with containers, materials, and structural elements (2004 – 2010)

Prepared for the Petroleum Services Association of Canada
Commissioned by Enform Canada



Enform level 2 reports

Enform level 2 reports to describe issues and trends observed within an industry in sufficient detail to facilitate the design of effective interventions. Given the increased complexity of information presented in level 2 reports, Enform anticipates providing assistance with interpretation.

The design of intervention is assisted by information concerning the context of the industrial activity which resulted in the injury. In an effort to provide meaningful context to the issues and trends identified in level 2 reports, each issue and/or trend is identified using a two step selection criteria. The primary factor used to identify issues for further study is the source of injury classification. The source of injury classification describes “what” has resulted in the issue or trend of concern. The secondary factor used to identify issues for further study is the event or exposure classification. The event or exposure classification describes “how” the injury was produced or inflicted.

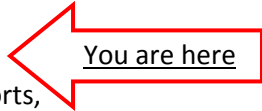
Each Enform level 2 report describes the issue or trend of concern in terms of; historical performance and impact of the issue, the characteristics of the claims (e.g., percentage of claims classified as disabling injuries), the characteristics of the injuries or illnesses (e.g., fracture of the arm), the characteristics of the injured workers (e.g., occupation of the injured worker), and temporal variables (e.g., month of occurrence).

This report is not meant to provide a description of overall health and safety performance in an industry; this is the role of Enform level 1 industry reports. Further, this report is not meant to describe employer specific performance or employer specific issues and trends of concern; this is the role of Enform employer reports. The content of Enform level 1 industry reports and Enform employer reports are described in Appendix B.



Intervention road map: It is the purpose of all injury and illness investigations to lead to the design of workplace interventions resulting in the reduction and/or the elimination of health and safety incidents.

1. Identify issues and trends of concern;
 - a. Review Enform level 1 industry report summarizing industry performance,
 - b. Form stakeholder group to select issues / trends for intervention,
 - c. Request Enform level 2 report(s) describing specific issues and trends selected and/or Enform employer report(s) describing employer specific performance.
2. Intervention design process facilitated by Enform;
 - a. Identify real world context of issues and trends described in Enform level 2 reports, and/or Enform employer reports,
 - b. Design intervention(s) and identify method of evaluating effectiveness.
3. Implement intervention.
4. Measure effect of intervention.
5. Review initiative results and, if necessary, modify to realize continuous improvement.



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Executive summary:

This Enform level 2 industry report describes hand injuries resulting from contact with containers, materials and structures in the Oilfield Downhole Services industry of Alberta. Hand injuries resulting from contact with containers, materials and structures accounted for 28.4% of all hand injury claims and 5.4% of all claims in the Oilfield Downhole Services industry from 2004 to 2010. Potential annual reductions realized through effective interventions addressing this issue are described below.

Projected reduction	Claims		Lost time claim rate		Disabling injury rate		Claims costs		Time loss	
	#	% of total	Rate	% of total	Rate	% of total	Cost (\$)	% of total	Days	% of total
*25%	10	1.6	0.01	1.4	0.03	1.9	19,061.47	1.2	33.5	0.9
*50%	20	3.1	0.01	2.9	0.06	3.7	38,122.94	2.3	67.0	1.9
*75%	29	4.7	0.02	4.3	0.09	5.6	57,184.41	3.5	100.5	2.8

*Projected based on 2010 industrial figures

Performance

Issue specific performance as measured by the lost time claim rate has remained consistent across the years examined and has not declined with the overall lost time claim rate. The percentage of the lost time claim rate attributable to hand injuries resulting from contact with containers, materials, and structures has increased from 2.5% in 2004 to 5.8% in 2010. The pattern observed in the disabling injury rate is similar. The percentage of the overall disabling injury rate due to hand injuries resulting from contact with containers, materials, and structures increased from 5.0% in 2004 to 7.5% in 2010.

Claims cost and time loss

Hand injuries due to contact with containers, materials, and structures accounted for \$550,010.18 in claims costs and 951 days lost during the period examined. Hand injuries resulting from contact with containers, materials, and structures accounted for 2.9% of all claims costs and 2.2% of all time loss.

Injury characteristics

The most common injuries resulting from contact with containers, materials, and structures were fractures, cuts, and bruises to the fingers and hand.

Injured worker characteristics

Male workers between the ages of 20 and 34 were most commonly injured due to contact with containers, materials and structures. 57.1 percent of workers injured had less than 1 year of work experience at the time of injury.

Time of injury

Hand injuries due to contact with containers, materials and structures were most common in January and February with marked reductions in May and December. In terms of the time of day, hand injuries due to contact with containers, materials and structures most commonly occurred at 10:00 am and between 2:00 and 4:00 pm.





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Hand injuries resulting from contact with containers, materials, and structural elements

1.0 Background

The below tables describe the source of injury and event or exposure groups considered in this report. Terms and definitions described below are defined in Appendix C.

Hand injuries resulting from contact with containers, materials, and structural elements

Event or exposure groups	Source of injury groups	*Number and percentage of claims
Contact with Objects and Equipment	Building materials—solid elements	163 (42.2 % of claims)
	Parts and materials, NEC	62 (16.1 % of claims)
	Machine, tool, and electric parts	41 (10.6 % of claims)
	Containers—non pressurized	33 (8.5% of claims)
	Other structural elements	29 (7.5 % of claims)
	Vehicle and mobile equipment parts	23 (6.0 % of claims)
	Containers—pressurized	20 (5.2% of claims)
	Cases, cabinets, racks, shelves	15 (3.9 % of claims)
	Total	386

*Percentage of claims occurring within the issue under examination

Secondary break out of groups with greater than 50 claims

Group	Classifications considered	*Number of claims	*Percentage of claims
Building materials—solid elements	Pipe/duct/tubing, UNS	77	47.2
	Pipe/duct/tubing, NEC	21	12.9
	Angle iron	11	6.7
	Metal pipe/tubing	11	6.7
	Wood, lumber, UNS	7	4.3
	Structural metal material, UNS	6	3.7
	Bar/rod/reinforcing bar	5	3.1
	Structural metal material, NEC	5	3.1
	Plate/metal panel	4	2.5
	Pipe fitting	3	1.8
	Beam	2	1.2
	Structural hardware, NEC	2	1.2
	Brick/block/structural stone, UNS	1	0.6
	Dimensional lumber, UNS	1	0.6
	Grate	1	0.6
	Plastic/rubber pipe/tubing	1	0.6
	Plywood/wood panel/particle board	1	0.6
	Rail	1	0.6
	Sheet metal	1	0.6
	Wood, lumber, NEC	1	0.6
Wooden pole	1	0.6	
Total	163	100.0	

*Percentage of claims occurring within the issue under examination

2.0 Issue specific performance and impact

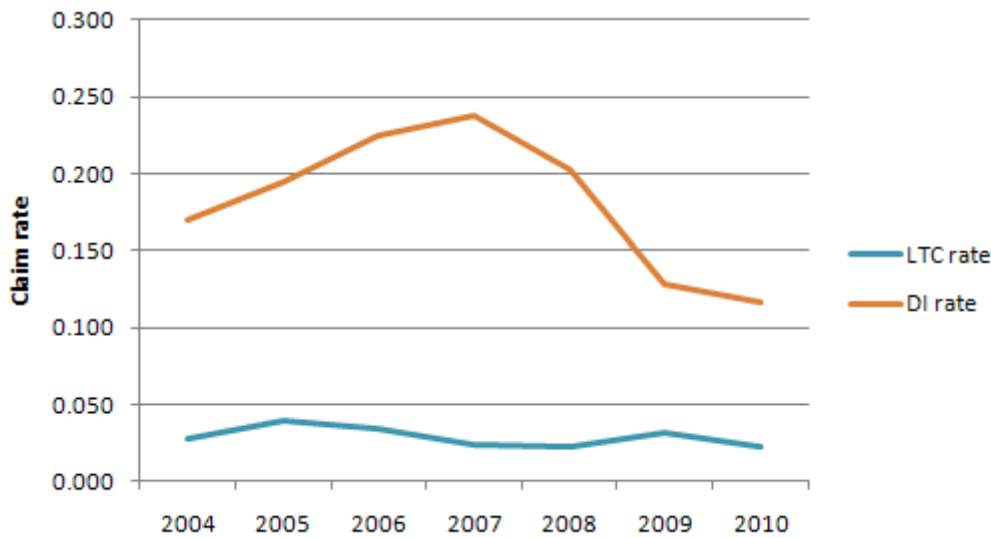
This section describes performance specific to the issue under examination as measured by the lost time claim rate and disabling injury rate. Also described in this section is the impact of the issue as assessed by the percentage of all lost time claims and disabling injury claims observed in the Oilfield Downhole Services industry accounted for by the issue under examination.

2.1 Performance

Table 1: Lost time claim and disabling injury rates due to the issue under examination

Year	Number of claims		Person years	Claim rate	
	Lost time	Disabling injury		Lost time claim	Disabling injury
2004	6	37	21,767.9	0.028	0.170
2005	10	50	25,658.7	0.039	0.195
2006	10	66	29,413.4	0.034	0.224
2007	7	69	28,953.9	0.024	0.238
2008	6	53	26,197.7	0.023	0.202
2009	8	32	24,981.9	0.032	0.128
2010	7	37	31,796.1	0.022	0.116
Total	54	344			

Figure 1: Lost time claim and disabling injury rate due to the issue under examination



2.2 Impact

Table 2: Percentage of all claims observed attributable to the issue under examination by claim type

Year	*All claims		Issue claims		Percentage of overall	
	Lost time	Disabling	Lost time	Disabling	Lost time	Disabling
2004	244	733	6	37	2.5	5.0
2005	335	1,022	10	50	3.0	4.9
2006	303	1,094	10	66	3.3	6.0
2007	273	946	7	69	2.6	7.3
2008	232	878	6	53	2.6	6.0
2009	147	462	8	32	5.4	6.9
2010	122	496	7	37	5.7	7.5
Total	1,656	5,631	54	344	3.3	6.1

*All claims: all claims observed within the industry under examination (not limited to issue under examination)

Figure 2: Percentage of lost time claims attributable to the issue under examination

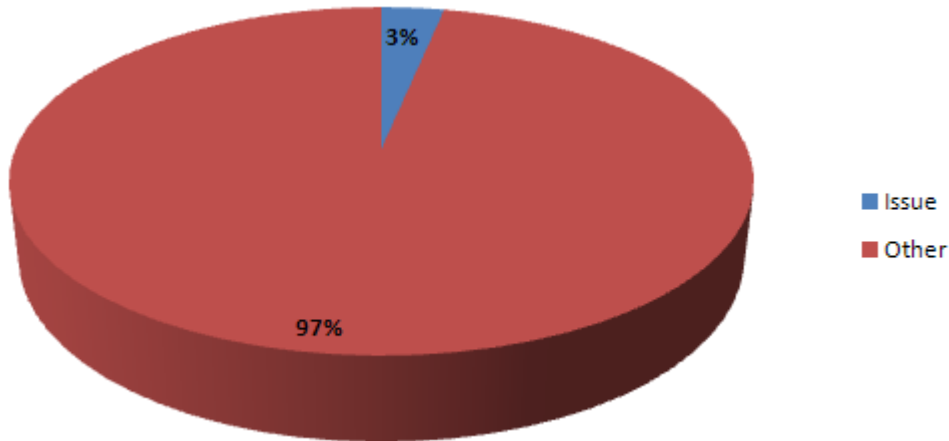
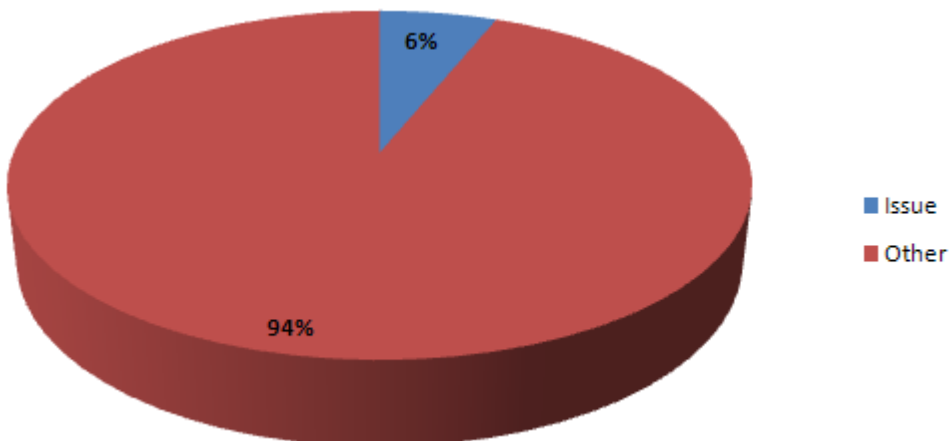


Figure 3: Percentage of disabling injury claims attributable to the issue under examination



3.0 Claim characteristics

3.1 Claim type: Disabling injuries and lost time claims

89.1% (344) of claims were classified as disabling injury claims and 14.0 % (54) were classified as lost time claims.

3.2 Claims cost and time loss

The below tables and charts describe the claims cost and time loss associated with the issue under examination. Tables in this section describes the mean (average), standard deviation, minimum and maximum cost and time loss values across all claims, considering disabling injury claims only, and considering lost time claims only.

96.9 % (374) of claims examined in this section contained information on the claims cost and time loss associated with the claim.

Table 3: Descriptive statistics describing claims costs associated with claims considered

	Claims	Mean (\$)	Standard deviation (\$)	Minimum (\$)	Maximum (\$)
All claims	374	1,470.62	3,985.82	19.22	53,026.69
Disabling injuries	336	1,580.50	4,189.38	19.22	53,026.69
Lost time claims	50	6,379.25	9,198.66	307.65	53,026.69

Table 4: Claims costs attributable to the issue under examination by year

Year	All claims (\$)	Issue claims (\$)	% of total
2004	1,833,960.46	45,102.61	2.5
2005	3,117,332.18	158,375.51	5.1
2006	3,797,546.91	51,223.41	1.3
2007	2,377,411.78	73,334.47	3.1
2008	3,911,591.96	62,149.61	1.6
2009	2,577,619.35	83,578.69	3.2
2010	1,638,455.57	76,245.88	4.7
Total	19,253,918.21	550,010.18	2.9

Figure 4: Percentage of total claims costs attributable to the issue under examination

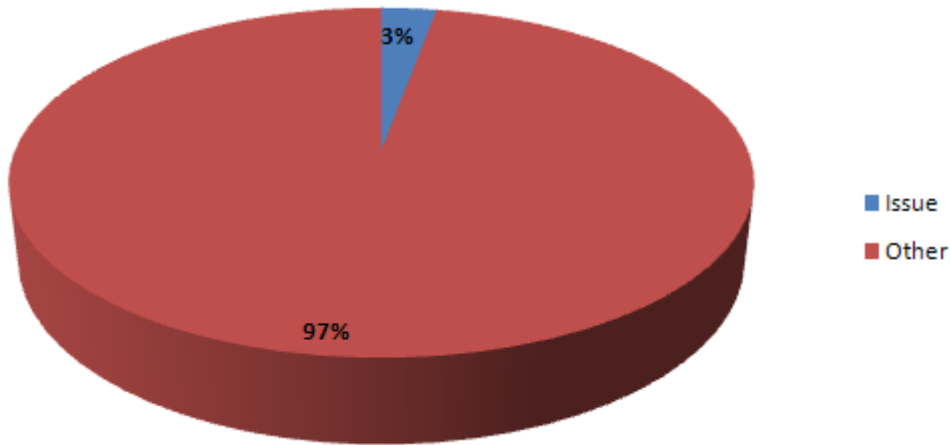


Table 5: Number of claims by cost group and claim type

Cost group	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
\$ 0.00	0	0.0	0	0.0	0	0.0
\$ 0.01-100	10	2.7	8	80.0	0	0.0
\$ 100-500	176	47.1	152	86.4	1	0.6
\$ 500-1,000	98	26.2	91	92.9	5	5.1
\$ 1,000-5,000	67	17.9	62	92.5	26	38.8
\$ 5,000-10,000	15	4.0	15	100.0	11	73.3
\$ 10,000 +	8	2.1	8	100.0	7	87.5
Total	374	100.0				

Figure 5: Distribution of claims across claims cost groups (all claims)

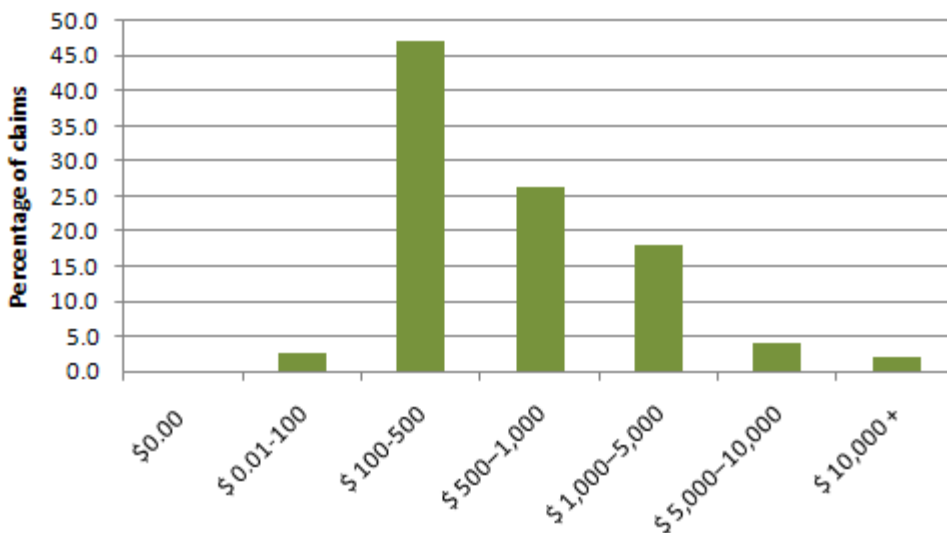


Table 6: Descriptive statistics describing time loss associated with claims considered

	Claims	Mean (days)	Standard deviation (days)	Minimum (days)	Maximum (days)
All claims	374	2.5	12.6	0.0	148.0
Disabling injuries	336	2.8	13.3	0.0	148.0
Lost time claims	50	19.0	29.9	0.0	148.0

Table 7: Time loss attributable to the issue under examination by year

Year	All claims (days)	Issue claims (days)	% of total
2004	5,548	101	1.8
2005	8,522	359	4.2
2006	7,180	61	0.8
2007	7,146	53	0.7
2008	6,896	29	0.4
2009	5,182	214	4.1
2010	3,542	134	3.8
Total	44,016	951	42.0

Figure 6: Percentage of total time loss attributable to the issue under examination

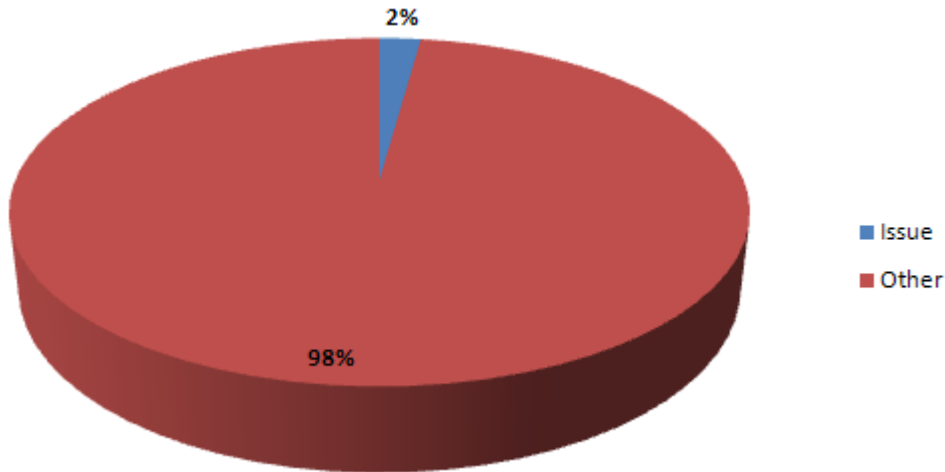
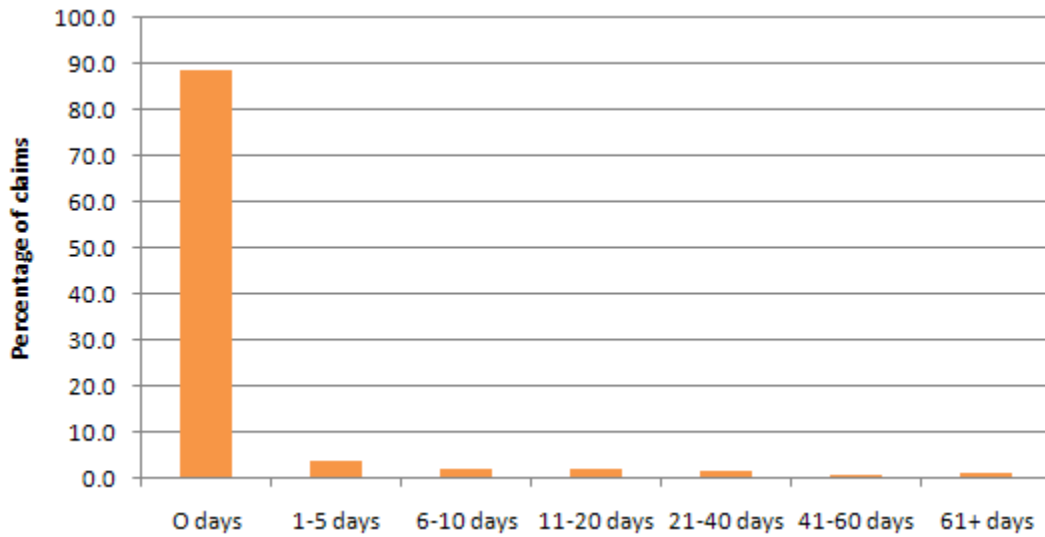


Table 8: Number of claims by time loss group and claim type

Time loss group	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
0 days	332	88.8	294	88.6	8	2.4
1-5 days	14	3.7	14	100.0	14	100.0
6-10 days	7	1.9	7	100.0	7	100.0
11-20 days	8	2.1	8	100.0	8	100.0
21-40 days	6	1.6	6	100.0	6	100.0
41-60 days	3	0.8	3	100.0	3	100.0
61+ days	4	1.1	4	100.0	4	100.0
Total	374	100.0				

Figure 7: Distribution of claims across time loss groups (all claims)



4.0 Characteristics of the injury or illness

This section describes the characteristics of the injuries or illnesses resulting from the source of injury and event or exposure classification under examination. The first sub section describes the principal physical characteristics of the injury or illness (nature of injury). The second sub section describes the part or part(s) of the body which are most commonly injured. Definitions of the nature of injury and part of body classifications referred to within the tables and charts in this section are defined in the Appendix C.

4.1 Nature of injury

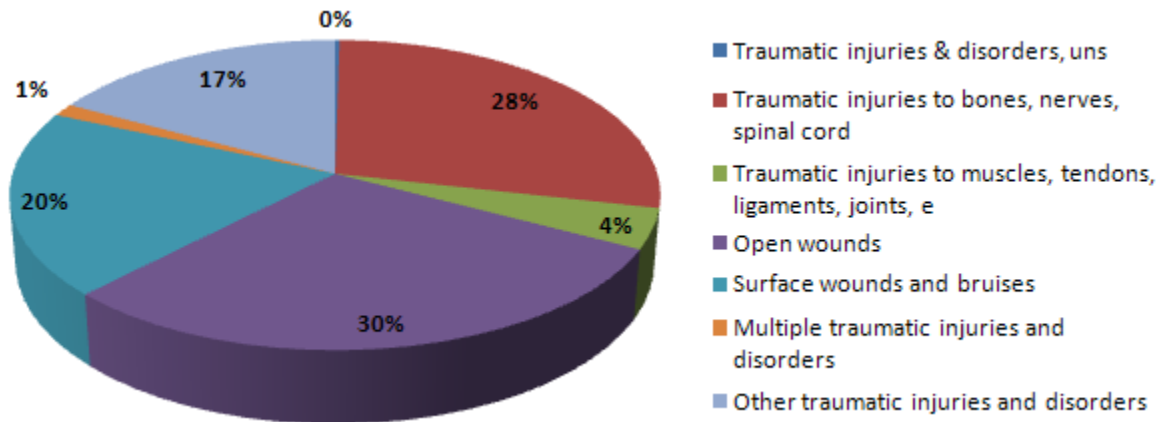
99.0% (382) of the claims examined in this section contained information on the nature of injury.

Table 9: Most common nature of injury classifications

Major group	Minor group	All claims		Disabling injuries		Lost time claims	
		#	% total	#	% claims	#	% claims
Traumatic injuries & disorders, unspecified	Traumatic injuries & disorders, unspecified	1	100.0	1	100.0	0	0.0
	Total	1	100.0				
Traumatic injuries to bones, nerves, spinal cord	Fractures	108	100.0	97	89.8	18	16.7
	Total	108	100.0				
Traumatic injuries to muscles, tendons, ligaments, joints, etc.	Sprains, strains, tears, unspecified	15	93.8	13	86.7	2	13.3
	Sprains, strains, tears, NEC	1	6.3	1	100.0	0	0.0
	Total	16	100.0				
Open wounds	Open wounds, unspecified	1	0.9	1	100.0	0	0.0
	Amputations, unspecified	4	3.5	2	50.0	2	50.0
	Amputations, fingertip	4	3.5	4	100.0	3	75.0
	Amputations, NEC	1	0.9	1	100.0	1	100.0
	Avulsions	4	3.5	3	75.0	2	50.0
	Cuts, lacerations	96	85.0	89	92.7	14	14.6
	Punctures, except bites	3	2.7	3	100.0	0	0.0
	Total	113	100.0				
Surface wounds and bruises	Abrasions, scratches	2	2.7	2	100.0	0	0.0
	Bruises, contusions	72	97.3	65	90.3	4	5.6
	Total	74	100.0				
Multiple traumatic injuries and disorders	Cuts, abrasions, bruises	2	40.0	2	100.0	0	0.0
	Sprains and bruises or strains	2	40.0	2	100.0	1	50.0
	NEC	1	20.0	1	100.0	0	0.0
	Total	5	100.0				

Other traumatic injuries and disorders	Non specified injuries and disorders, UNS	2	3.1	2	100.0	0	0.0
	Crushing injuries	62	95.4	51	82.3	7	11.3
	Soreness, pain, hurt, except the back	1	1.5	1	100.0	0	0.0
	Total	65	100.0				

Figure 8: Percentage of claims by nature of injury group (all claims)



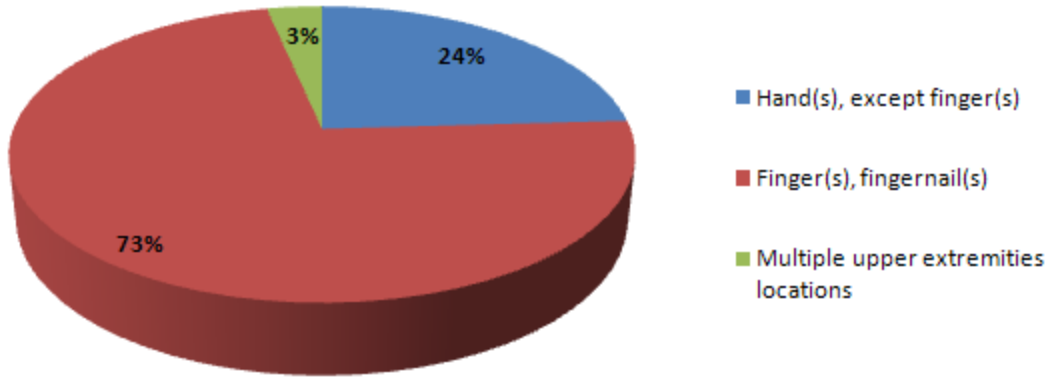
4.2 Part of body injured

100 % (386) of claims examined in this section contained information on the part of body injured.

Table 10: Most common part of body classifications

Major group	Minor group	All claims		Disabling injuries		Lost time claims	
		#	% total	#	% claims	#	% claims
Hand(s), except finger(s)	Hand(s), except finger(s)	93	100.0	85	91.4	13	14.0
	Total	93	100.0				
Finger(s), fingernail(s)	Finger(s), fingernail(s), UNS	75	26.8	66	88.0	5	6.7
	Thumb or thumb and other finger(s)	38	13.6	33	86.8	6	15.8
	Finger(s), except thumb	164	58.6	144	87.8	26	15.9
	Finger(s), fingernail(s), NEC	3	1.1	3	100.0	1	33.3
	Total	280	100				
Multiple upper extremities locations	Hand(s) and finger(s) or thumb(s)	8	61.6	8	100.0	3	37.5
	Hand(s) and wrist(s)	3	23.1	3	100.0	0	0.0
	Multiple upper extremities locations, NEC	2	15.4	2	100.0	0	0.0
	Total	13	100				

Figure 9: Percentage of claims by part of body injured group (all claims)



5.0 Characteristics of the injured workers

This section describes the characteristics of the workers injured from the issue under examination. Characteristics examined in this section include; the gender, age, experience (years worked before injury), and occupation of the injured workers.

5.1 Gender

99 % of claims examined in this section contained information on the gender of the injured worker.

95.3 % (382) of the workers injured due to the source of injury and event or exposure classification under examination were male and 3.6% were female.

Table 11: Number of claims by gender and claim type

Gender	All claims		Disabling injuries		Lost time claims	
	#	% claims	#	% claims	#	% claims
Female	14	3.6	12	85.7	0	0.0
Male	368	95.3	329	89.4	54	14.7
Not elsewhere classified	4	1.0	3	75.0	0	0.0
Total	386	100.0				

5.2 Age

100 % (386) of claims examined in this section contained information on the age of the injured worker.

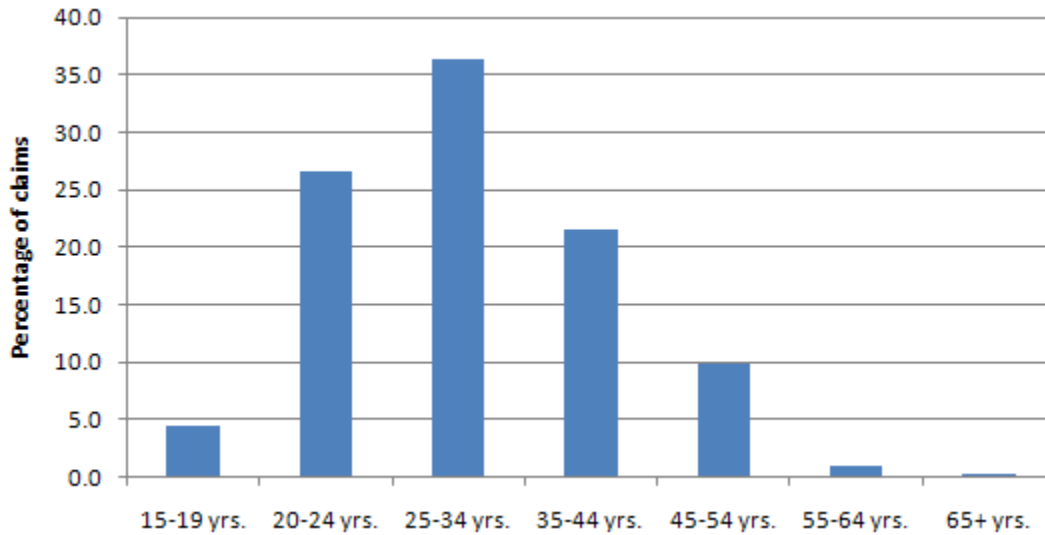
Table 12: Descriptive statistics describing age of the injured workers considered

	Claims	Mean (yrs.)	Standard deviation (yrs.)	Minimum (yrs.)	Maximum (yrs.)
All claims	386	31.2	9.5	17	66
Disabling injuries	344	31.3	9.5	17	66
Lost time claims	54	32.0	9.3	17	54

Table 13: Number of claims by age group and claim type

Age group	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
15-19 yrs.	17	4.4	16	94.1	5	29.4
20-24 yrs.	103	26.7	86	83.5	9	8.7
25-34 yrs.	140	36.3	128	91.4	19	13.6
35-44 yrs.	83	21.5	76	91.6	14	16.9
45-54 yrs.	38	9.8	33	86.8	7	18.4
55-64 yrs.	4	1.0	4	100.0	0	0.0
65+ yrs.	1	0.3	1	100.0	0	0.0
Total	386	100.0				

Figure 10: Distribution of claims across age groups (all claims)



5.3 Experience

45.3 % (175) of claims examined in this section contained information on the experience of the injured worker. Experience information is presented as years worked before the injury.

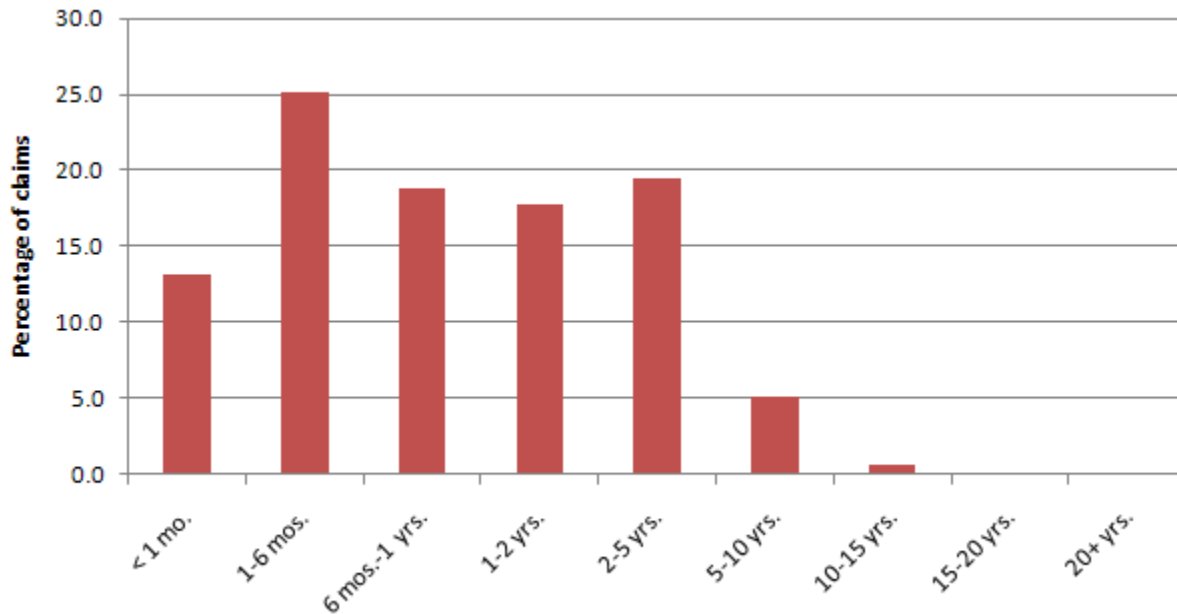
Table 14: Descriptive statistics describing experience of the injured workers considered

	Claims	Mean (yrs.)	Standard deviation (yrs.)	Minimum (yrs.)	Maximum (yrs.)
All claims	175	1.5	1.9	0.0	10.3
Disabling injuries	163	1.5	1.9	0.0	10.3
Lost time claims	37	1.6	2.4	0.0	10.3

Table 15: Number of claims by experience group and claim type

Experience group	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
< 1 mo.	23	13.1	23	100.0	7	30.4
1-6 mos.	44	25.1	41	93.2	8	18.2
6 mos.-1 yrs.	33	18.9	30	90.9	6	18.2
1-2 yrs.	31	17.7	28	90.3	8	25.8
2-5 yrs.	34	19.4	32	94.1	5	14.7
5-10 yrs.	9	5.1	8	88.9	2	22.2
10-15 yrs.	1	0.6	1	100.0	1	100.0
15-20 yrs.	0	0.0	0	0.0	0	0.0
20+	0	0.0	0	0.0	0	0.0
Total	175	100.0				

Figure 11: Distribution of claims across experience groups (all claims)



5.4 Occupation of the injured worker

100 % (386) of claims examined in this section contained information on the occupation of the injured worker.

Table 16: Number of claims by occupation of the injured worker and claim type

Occupation	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
Oil & Gas Drilling, Svc Related Workers	56	14.5	52	92.9	8	14.3
Oil & Gas - Drilling/Service Workers	35	9.1	31	88.6	7	20.0
Not Yet Classified	32	8.3	28	87.5	1	3.1
Heavy Equip operators (Except Crane)	31	8.0	28	90.3	3	9.7
Truck Drivers	30	7.8	28	93.3	4	13.3
Oil & Gas Drilling & Svc Workers	29	7.5	23	79.3	3	10.3
Material Handlers	20	5.2	18	90.0	3	15.0
Underground Mine Support Workers	12	3.1	9	75.0	1	8.3
Sups, Oil & Gas Drilling & Svc	11	2.8	11	100.0	3	27.3
Sups, Heavy Const Equip Crews	10	2.6	10	100.0	2	20.0

6.0 Temporal variables: Month of year and time of day

This section describes the month of the year and time of day the injuries occurred from the issue under examination.

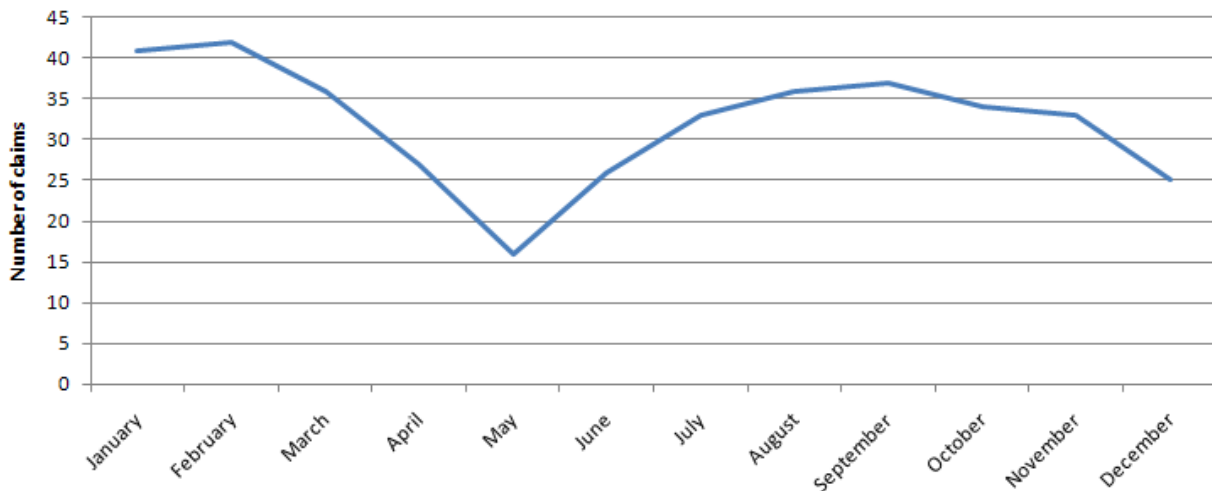
6.1 Month of occurrence

100 % (386) of claims examined in this section contained information on the month of occurrence.

Table 17: Number of claims by month of occurrence and claim type

Month	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
January	41	10.6	36	87.8	5	12.2
February	42	10.9	39	92.9	4	9.5
March	36	9.3	32	88.9	3	8.3
April	27	7.0	23	85.2	1	3.7
May	16	4.1	15	93.8	1	6.3
June	26	6.7	23	88.5	7	26.9
July	33	8.5	30	90.9	4	12.1
August	36	9.3	32	88.9	5	13.9
September	37	9.6	33	89.2	8	21.6
October	34	8.8	28	82.4	6	17.6
November	33	8.5	32	97.0	8	24.2
December	25	6.5	21	84.0	2	8.0
Total	386	100.0				

Figure 12: Number of claims by month of the year (all claims)



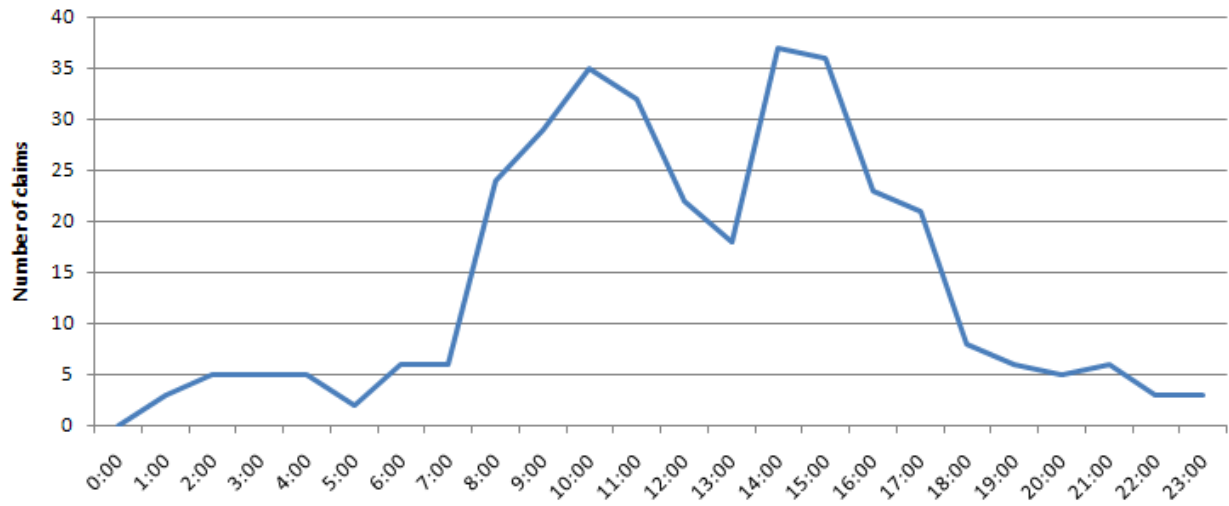
6.2 Hour of the day

88.1 % (340) of claims examined in this section contained information on the hour of occurrence.

Table 18: Number of claims by hour of occurrence and claim type

Hour	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
0:00	0	0.0	0	0.0	0	0.0
1:00	3	0.9	3	100.0	1	33.3
2:00	5	1.5	4	80.0	1	20.0
3:00	5	1.5	5	100.0	0	0.0
4:00	5	1.5	4	80.0	2	40.0
5:00	2	0.6	2	100.0	0	0.0
6:00	6	1.8	5	83.3	1	16.7
7:00	6	1.8	6	100.0	1	16.7
8:00	24	7.1	22	91.7	4	16.7
9:00	29	8.5	27	93.1	6	20.7
10:00	35	10.3	31	88.6	4	11.4
11:00	32	9.4	28	87.5	4	12.5
12:00	22	6.5	19	86.4	2	9.1
13:00	18	5.3	12	66.7	1	5.6
14:00	37	10.9	32	86.5	4	10.8
15:00	36	10.6	34	94.4	5	13.9
16:00	23	6.8	22	95.7	2	8.7
17:00	21	6.2	20	95.2	3	14.3
18:00	8	2.4	7	87.5	1	12.5
19:00	6	1.8	6	100.0	0	0.0
20:00	5	1.5	5	100.0	1	20.0
21:00	6	1.8	6	100.0	1	16.7
22:00	3	0.9	3	100.0	1	33.3
23:00	3	0.9	3	100.0	2	66.7
Total	340	100.0				

Figure 13: Number of claims by hour of occurrence (all claims)





Appendix A: General information pertaining to this report

- All claims associated with industry and employer accounts accepted by the WCB in the years examined are included in the Enform Injury and Illness Database used to generate this report. Claim types described in this report include; medical aid claims and lost time claims.
- WCB claims included in the disabling injury claim category include; medical aid claims which involve modified work, modified work only claims, and lost time claims without modified work.
- Claims included in the lost time claim category include lost time claims which involve modified work and those which do not involve modified work.
- Given the lost time claim group includes claims with and without modified work, the disabling injury claim group and lost time claim group are not mutually exclusive (some claims are considered in both groups).
- Recurrent incidences of the same injury or illness resulting in a claim within individuals are not considered separate claims in this report. Recurrence of the same injury within an individual results in the original claim being reactivated. Multiple different injuries resulting in claims within an individual are considered separate claims.
- Costs and time loss figures reported here reflect the claims costs and time loss days accrued from January 1 of the year of occurrence to March 31 of the following year. A 15 month collection window has been used to limit the ability of claims occurring in earlier years to accrue more claims costs and time loss than claims occurring in subsequent years.
- The reliability of a statistic or trend is affected by the number of data points (claims) considered in generating the statistic or trend. As a general rule, 30 data points (claims) are required to arrive at a stable trend or statistic. A description of the number of claims considered in statistics and trends reported is included in each section of this report to enable the reader to assess the strength of conclusions that may be drawn.
- In an effort to maximize reliability issues and trends identified in this report, all claims are considered across the period examined and not each year individually.
- Employer size comparisons are based on person year estimates calculated using the WCB of industry average wage figure.

$$\text{Person years} = \frac{\text{WCB Total insurable earnings}}{\text{WCB Industry average wage} \times 2,000 \text{ hours}}$$



Appendix B: Content of Enform Level 1 industry and Enform employer reports

Intervention road map

1. Identify issues and trends of concern;
 - a. Review Enform level 1 industry report summarizing industry performance,
 - b. Form stakeholder group to select issues / trends for intervention,
 - c. Request Enform level 2 report(s) describing specific issues and trends selected, and/or Enform employer report(s) describing employer specific performance.
2. Intervention design process facilitated by Enform;
 - a. Identify real world context of issues and trends described in Enform level 2 reports, and/or Enform employer reports,
 - b. Design intervention(s) and identify method of evaluating effectiveness.
3. Implement intervention.
4. Measure effect of intervention.
5. Review initiative results and, if necessary, modify to realize continuous improvement.

Enform level 1 industry reports

Enform level 1 industry reports summarize health and safety performance across the industry examined. It is the purpose of Enform level 1 industry reports to provide a description of overall health and safety performance and identify issues and trends for further study in partnership with stakeholders.

Enform level 1 industry reports describe; the industrial activity taking place (e.g., number of employers, total insurable earnings), claims experience (e.g., number of claims and classification of claims, time loss, claims cost), characteristics of the injured workers (e.g., gender, age, experience, occupation), and information on the characteristics of the injuries themselves (e.g., part of body injured). Issues and trends of concern identified for further study in Enform level 2 industry reports are also described. Enform level 1 industry reports are available by contacting Enform.

Enform employer reports

Enform employer reports reveal important information concerning health and safety performance within an individual employer. It is the purpose of Enform employer reports to provide insight into how the issues and trends observed within an individual employer compare to the issues and trends observed across employer's peer group (industry). Enform employer reports describe the comparative performance of an employer and highlight circumstances where trends observed differ significantly between the employer and their peer group.



Each Enform employer report describes health and safety performance within an individual employer in terms of; claims experience (e.g., rank of employer within peer group), characteristics of workers (e.g., average age of injured worker employer vs. peer group), and characteristics of injuries and illnesses (most common part of body injured employer vs. peer group). A sample Enform employer report is available by contacting Enform.



Appendix C: Key terms and definitions

Claims cost per person year	Claims cost per person year is calculated by dividing the total claims cost by the total person years worked.
Duration rate (AEI definition)	The duration rate is calculated by dividing the number of workdays-lost (disability days) by the person-year estimate, and multiplying by 100. The result is expressed as days-lost per 100 person-years worked, and indicates, in part, the economic impact of occupational injury and disease. Duration rates are not recommended as reliable indicators of full economic cost. In addition, readers are warned that duration rates are highly unstable when based on only a few lost-time claims; it is recommended that the duration rate not be calculated based upon fewer than 30 lost-time claims.
First aid (WCB Alberta Policy manual definition)	<p>First aid is limited to a one-time treatment, with follow-up visit if needed, for observation purposes only, of injuries such as minor cuts, scrapes, scratches, treatment of minor burns, removing splinters, etc., or other minor injuries which do not require medical treatment beyond the date of accident.</p> <p>First aid is the type of treatment performed regardless of who performs the treatment. In most cases, first aid treatment is provided by a first aid practitioner. However, there may be situations when first aid treatment is provided by a physician or at a medical facility. These possibilities are more likely when:</p> <ul style="list-style-type: none">• the hospital or health facility is the workplace,• the employer has on-site health care practitioners and health facilities,• the employer has specific contracts with health care facilities to provide first aid and health care to their workers. <p>If the professional skills of a health care professional are required, and a first aid practitioner could not have provided the care and evaluation, the treatment is not first aid and should be reported to the WCB.</p>
Lost time claim (AEI definition)	A lost time claim (LTC) is a claim for an occupational injury or disease that causes the worker to have time away from work beyond the day of injury. Included are claims receiving reimbursement of full or partial lost wages due to occupational illness or injury, or payment for permanent loss of function.
Median	The numeric value separating the higher half of distribution of numbers from the lower half.
Medical aid (WCB Alberta Policy manual definition)	<p>Medical aid includes medical and other services provided by a person licensed to practice the healing arts in Alberta, and nursing, hospitalization, drugs, dressing, x-ray treatment, special treatment, appliances, apparatuses, transportation, and any other matters and things that the Board authorizes or provides.</p> <p>Coverage is also extended when an accident results in the loss, damage, or breakage of an artificial limb, eyeglasses, dentures, etc.</p> <p>Medical aid that is considered first aid does not need to be reported to the WCB.</p>
Qualified Age	Age groups with greater than 30 claims.
Group Severity	Severity is defined by the ratio of lost time claims to medical aid claims in Alberta, the ratio of no time loss claims to time loss claims in Saskatchewan, and the ratio of serious injury claims to non serious injury claims in British Columbia.



**Standard
Deviation**

A statistical metric which describes how much variation there is from the "average" or "mean" value. A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data is spread out over a large range of values.

References:

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National Occupational Classification, accessed via the internet on November 26, 2009, <http://www5.hrsdc.gc.ca/NOC/English/NOC/2006/Welcome.aspx>, Department of Human Resources and Skills Development Canada. Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2009.



Issue 2: Hand injuries resulting from contact with machinery (2004 – 2010)

Prepared for the Petroleum Services Association of Canada
Commissioned by Enform Canada



Enform level 2 reports

Enform level 2 reports describe issues and trends observed within an industry in sufficient detail to facilitate the design of effective interventions. Given the increased complexity of information presented in level 2 reports, Enform anticipates providing assistance with interpretation.

The design of intervention is assisted by information concerning the context of the industrial activity which resulted in the injury. In an effort to provide meaningful context to the issues and trends identified in a level 2 report, each issue and/or trend is identified using a two step selection criteria. The primary factor used to identify issues for further study is the source of injury classification. The source of injury classification describes “what” has resulted in the issue or trend of concern. The secondary factor used to identify issues for further study is the event or exposure classification. The event or exposure classification describes “how” the injury was produced or inflicted.

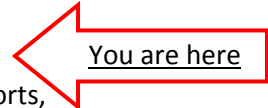
Each Enform level 2 report describes the issue or trend of concern in terms of; historical performance and impact of the issue, the characteristics of the claims (e.g., percentage of claims classified as disabling injuries), the characteristics of the injuries or illnesses (e.g., fracture of the arm), the characteristics of the injured workers (e.g., occupation of the injured worker), and temporal variables (e.g., month of occurrence).

This report is not meant to provide a description of overall health and safety performance in the an industry; this is the role of Enform level 1 industry reports. Further, this report is not meant to describe employer specific performance or employer specific issues and trends of concern; this is the role of Enform employer reports. The content of Enform level 1 industry reports and Enform employer reports are described in Appendix B.



Intervention road map: It is the purpose of all injury and illness investigations to lead to the design of workplace interventions resulting in the reduction and/or the elimination of health and safety incidents.

1. Identify issues and trends of concern;
 - a. Review Enform level 1 industry report summarizing industry performance,
 - b. Form stakeholder group to select issues / trends for intervention,
 - c. Request Enform level 2 report(s) describing specific issues and trends selected and/or Enform employer report(s) describing employer specific performance.
2. Intervention design process facilitated by Enform;
 - a. Identify real world context of issues and trends described in Enform level 2 reports, and/or Enform employer reports,
 - b. Design intervention(s) and identify method of evaluating effectiveness.
3. Implement intervention.
4. Measure effect of intervention.
5. Review initiative results and, if necessary, modify to realize continuous improvement.



Report prepared by:



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Executive summary:

This Enform level 2 report describes hand injuries resulting from contact with machinery in the Oilfield Downhole Services industry of Alberta. Hand injuries resulting from contact with machinery accounted for 4.3% of all hand injury claims and 0.8% of all claims in the Oilfield Downhole Services industry from 2004 to 2010. Potential annual reductions realized through effective interventions addressing this issue are described below.

Potential annual reductions realized with successful intervention

Projected	Claims		Lost time claim rate		Disabling injury rate		Claims costs		Time loss	
	#	%	Rate	%	Rate	%	Cost	%	Days	%
*25%	1.5	0.2	0.00	0.2	0.00	0.3	2,607.59	0.2	1.5	0.0
*50%	3	0.5	0.00	0.4	0.01	0.6	5,215.18	0.3	3.0	0.1
*75%	4.5	0.7	0.00	0.6	0.01	0.9	7,822.77	0.5	4.5	0.1

*Projected based on 2010 industrial figures

Performance

- Issue specific performance as measured by the lost time claim rate has been variable during the period examined ranging from a peak of 0.02 in 2006 to a low of 0.0 (no lost time claims) in 2009. Issue specific performance as measured by the disabling injury rate was similarly variable ranging as issue specific disabling injury rates ranged from a peak of 0.54 in 2006 to a low of 0.008 in 2009.

Claims cost and time loss

- Hand injuries due to contact with machinery accounted for \$100,906.63 in claims costs and 166 days lost in the period examined. Hand injuries resulting from contact with machinery accounted for 0.5% of all claims costs and 0.4% of all time loss.

Injury characteristics

- The most common hand injuries resulting from contact with machinery were fractures, cuts, and crush injuries.

Injured worker characteristics

- Male workers between the ages of 25 and 34 were most commonly injured due to contact with machinery. 54.6% of workers injured had less than 1 year of work experience at the time of injury.

Time of injury

- Hand injuries resulting from contact with machinery were most common in January and March. In terms of the time of day, peaks in injuries due to contact with machinery were observed at 9:00 am, 12:00 pm, and 3:00 pm.



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Hand injuries resulting from contact with machinery

1.0 Background

The below table describes the source of injury and event or exposure groups considered in this report. Terms and definitions described below are defined in Appendix C.

Event or exposure groups	Source of injury groups	*Number and percentage of claims
Contact with Objects and Equipment	Construction, logging, and mining machinery	17 (28.8% of claims)
	Material-handling machinery	16 (27.1% of claims)
	Metal, woodworking, and special material machinery	14 (23.7% of claims)
	Miscellaneous machinery	12 (20.3% of claims)
	Total	59

2.0 Issue specific performance and impact

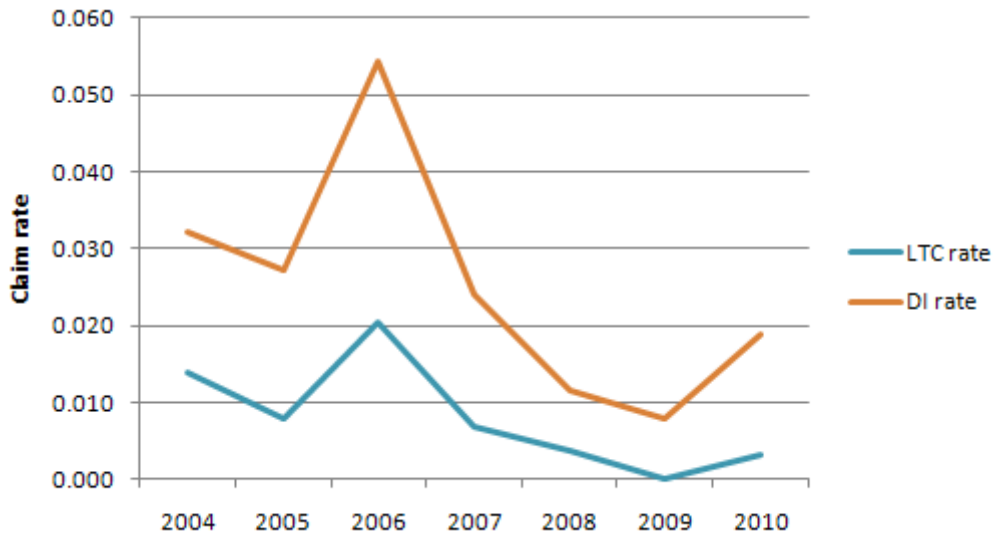
This section describes performance specific to the issue under examination as measured by the lost time claim rate and disabling injury rate. Also described in this section is the impact of the issue as assessed by the percentage of all lost time claims and disabling injury claims observed in the Oilfield Downhole Services industry accounted for by the issue under examination.

2.1 Performance

Table 1: Lost time claim and disabling injury rates due to the issue under examination

Year	Number of claims		Person years	Claim rate	
	Lost time	Disabling injury		Lost time claim	Disabling injury
2004	3	7	21,767.9	0.014	0.032
2005	2	7	25,658.7	0.008	0.027
2006	6	16	29,413.4	0.020	0.054
2007	2	7	28,953.9	0.007	0.024
2008	1	3	26,197.7	0.004	0.011
2009	0	2	24,981.9	0.000	0.008
2010	1	6	31,796.1	0.003	0.019
Total	15	48			

Figure 1: Lost time claim and disabling injury rate due to the issue under examination



2.2 Impact

Table 2: Percentage of all claims observed attributable to the issue under examination by claim type

Year	*All claims		Issue claims		Percentage of overall	
	Lost time	Disabling	Lost time	Disabling	Lost time	Disabling
2004	244	733	3	7	1.2	1.0
2005	335	1,022	2	7	0.6	0.7
2006	303	1,094	6	16	2.0	1.5
2007	273	946	2	7	0.7	0.7
2008	232	878	1	3	0.4	0.3
2009	147	462	0	2	0.0	0.4
2010	122	496	1	6	0.8	1.2
Total	1,656	5,631	15	48	0.9	0.9

*All claims: all claims observed within the industry under examination (not limited to issue under examination)

Figure 2: Percentage of lost time claims attributable to the issue under examination

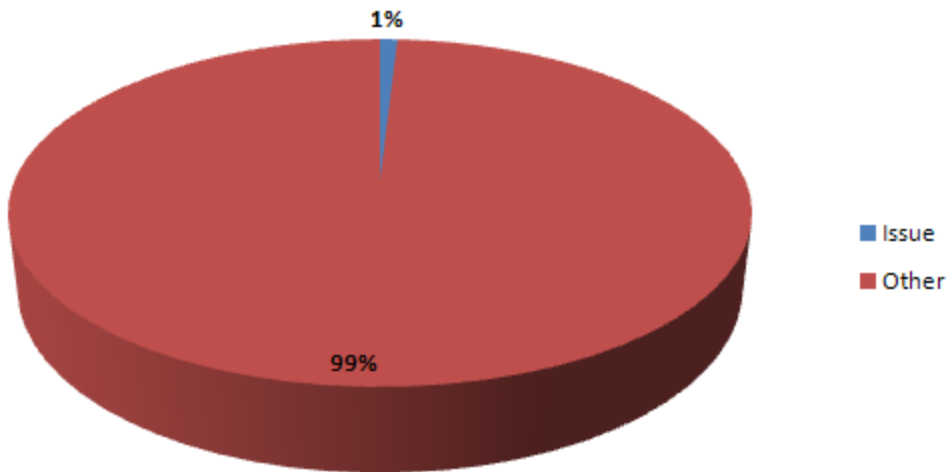
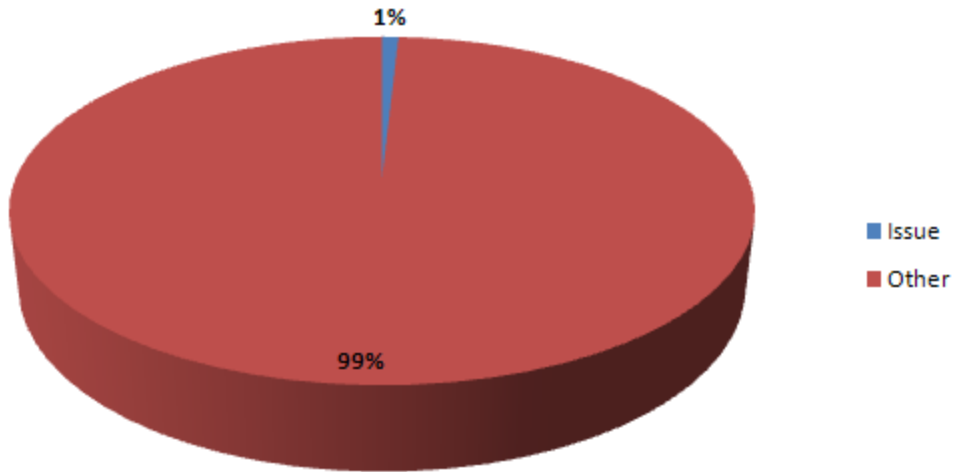


Figure 3: Percentage of disabling injury claims attributable to the issue under examination





3.0 Claim characteristics

3.1 Claim type: Disabling injuries and lost time claims

81.4% (48) of claims were classified as disabling injury claims and 25.4 % (15) were classified as lost time claims.

3.2 Claims cost and time loss

The below tables and charts describe the claims cost and time loss associated with the issue under examination. Tables in this section describes the mean (average), standard deviation, minimum and maximum cost and time loss values across all claims, considering disabling injury claims only, and considering lost time claims only.

98.3 % (58) of claims examined in this section contained information on the claims cost and time loss associated with the claim.

Table 3: Descriptive statistics describing claims costs associated with claims considered

	Claims	Mean (\$)	Standard deviation (\$)	Minimum (\$)	Maximum (\$)
All claims	58	1,739.77	2,794.80	64.74	17,099.30
Disabling injuries	48	1,916.92	3,036.40	64.74	17,099.30
Lost time claims	15	4,519.99	4,277.79	550.68	17,099.30

Table 4: Claims costs attributable to the issue under examination by year

Year	All claims (\$)	Issue claims (\$)	% of total
2004	1,833,960.46	28,454.56	1.6
2005	3,117,332.18	11,046.40	0.4
2006	3,797,546.91	19,898.01	0.5
2007	2,377,411.78	10,545.38	0.4
2008	3,911,591.96	18,376.33	0.5
2009	2,577,619.35	2,155.59	0.1
2010	1,638,455.57	10,430.36	0.6
Total	19,253,918.21	100,906.63	0.5

Figure 4: Percentage of total claims costs attributable to the issue under examination

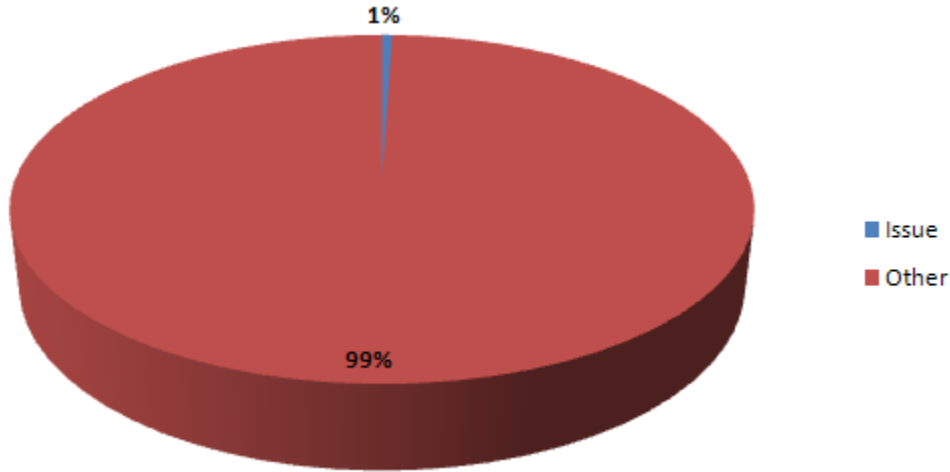


Table 5: Number of claims by cost group and claim type

Cost group	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
\$ 0.00	0	0.0	0	0.0	0	0.0
\$ 0.01-100	2	3.4	2	100.0	0	0.0
\$ 100-500	21	36.2	18	85.7	0	0.0
\$ 500-1,000	14	24.1	10	71.4	3	21.4
\$ 1,000-5,000	15	25.9	12	80.0	6	40.0
\$ 5,000-10,000	5	8.6	5	100.0	5	100.0
\$ 10,000 +	1	1.7	1	100.0	1	100.0
Total	58	100.0				

Figure 5: Distribution of claims across claims cost groups (all claims)

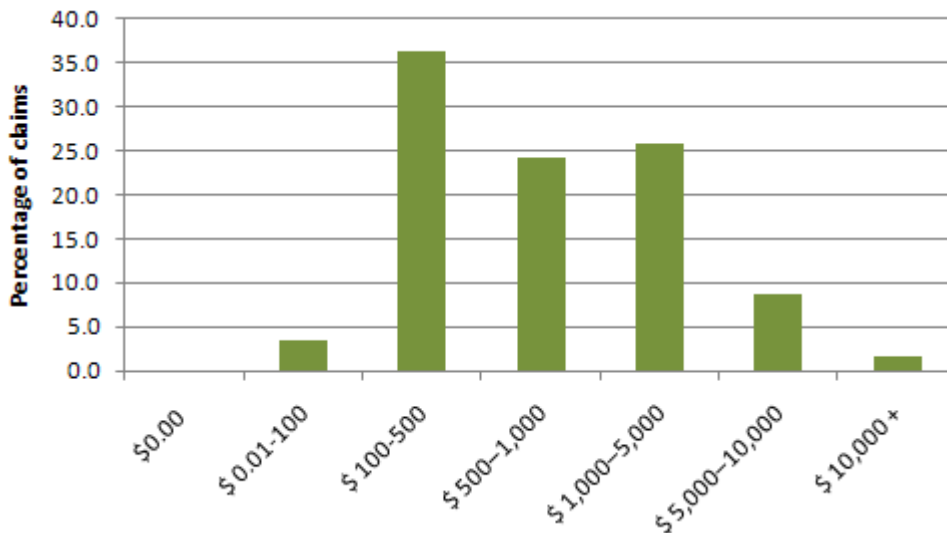


Table 6: Descriptive statistics describing time loss associated with claims considered

	Claims	Mean (days)	Standard deviation (days)	Minimum (days)	Maximum (days)
All claims	58	2.9	8.9	0.0	60.0
Disabling injuries	48	3.5	9.7	0.0	60.0
Lost time claims	15	11.1	15.0	0.0	60.0

Table 7: Time loss attributable to the issue under examination by year

Year	All claims (days)	Issue claims (days)	% of total
2004	5,548	98	1.8
2005	8,522	16	0.2
2006	7,180	21	0.3
2007	7,146	23	0.3
2008	6,896	2	0.0
2009	5,182	0	0.0
2010	3,542	6	0.2
Total	44,016	166	0.4

Figure 6: Percentage of total time loss attributable to the issue under examination

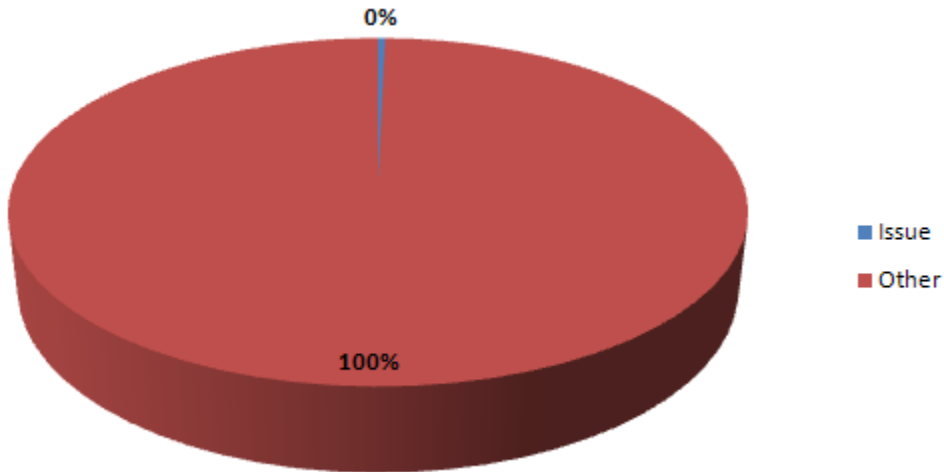
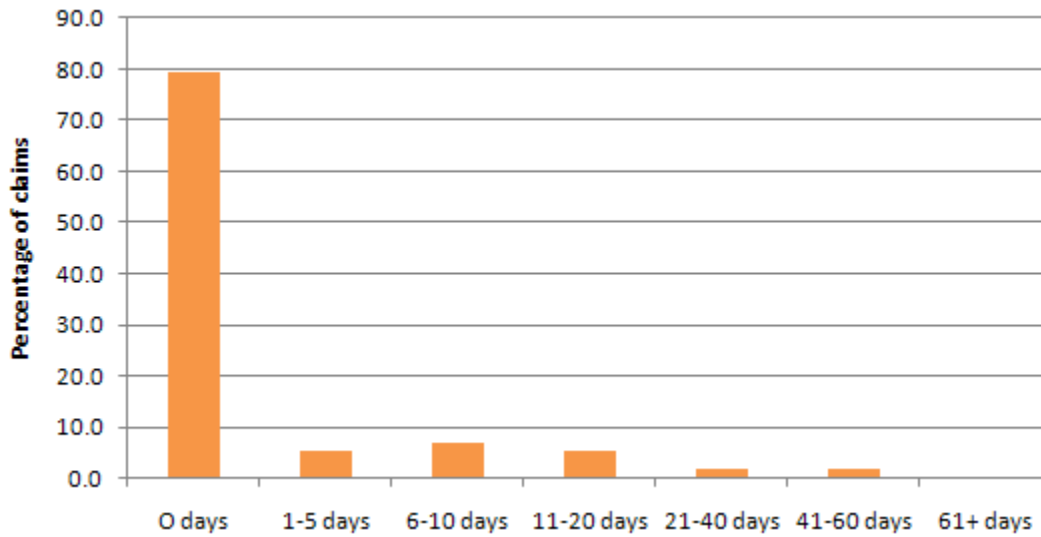


Table 8: Number of claims by time loss group and claim type

Time loss group	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
0 days	46	79.3	36	78.3	3	6.5
1-5 days	3	5.2	3	100.0	3	100.0
6-10 days	4	6.9	4	100.0	4	100.0
11-20 days	3	5.2	3	100.0	3	100.0
21-40 days	1	1.7	1	100.0	1	100.0
41-60 days	1	1.7	1	100.0	1	100.0
61+ days	0	0.0	0	0.0	0	0.0
Total	58	100.0				

Figure 7: Distribution of claims across time loss groups (all claims)



4.0 Characteristics of the injury or illness

This section describes the characteristics of the injuries or illnesses resulting from the source of injury and event or exposure classification under examination. The first sub section describes the principal physical characteristics of the injury or illness (nature of injury). The second sub section describes the part or part(s) of the body which are most commonly injured. Definitions of the nature of injury and part of body classifications referred to within the tables and charts in this section are defined in the Appendix C.

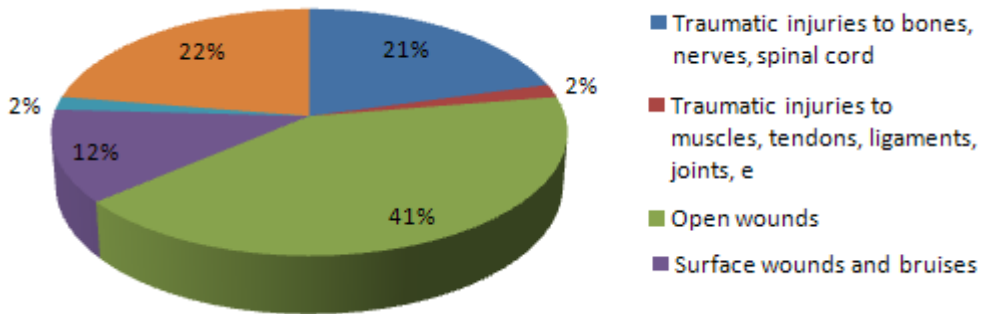
4.1 Nature of injury

98.3 % (58) of the claims examined in this section contained information on the nature of injury.

Table 9: Most common nature of injury classifications

Major group	Minor group	All claims		Disabling injuries		Lost time claims	
		#	% total	#	% claims	#	% claims
Traumatic injuries to bones, nerves, spinal cord	Fractures	11	19.0	8	72.7	4	36.4
	Traumatic injury to bones, nerves, spinal cord, n.e.c.	1	1.7	1	100.0	0	0.0
	Total	12	20.7				
Traumatic injuries to muscles, tendons, ligaments, joints, e	Sprains, strains, tears, uns	1	100.0	1.0	100.0	0	0.0
	Total	1	100.0				
Open wounds	Amputations, uns	2	8.3	2.0	100.0	2	100.0
	Amputations, fingertip	1	4.2	1.0	100.0	1	100.0
	Cuts, lacerations	19	79.2	14.0	73.7	4	21.1
	Punctures, except bites	2	8.3	2.0	100.0	0	0.0
	Total	24	100.0				
Surface wounds and bruises	Abrasions, scratches	1	14.3	0.0	0.0	0	0.0
	Bruises, contusions	6	85.7	6.0	100.0	0	0.0
	Total	7	100.0				
Multiple traumatic injuries and disorders	Cuts, abrasions, bruises	1	100.0	1.0	100.0	0	0.0
	Total	1	100.0				
Other traumatic injuries and disorders	Crushing injuries	13	100.0	11.0	84.6	4	30.8
	Total	13	100.0				

Figure 8: Percentage of claims by nature of injury group (all claims)



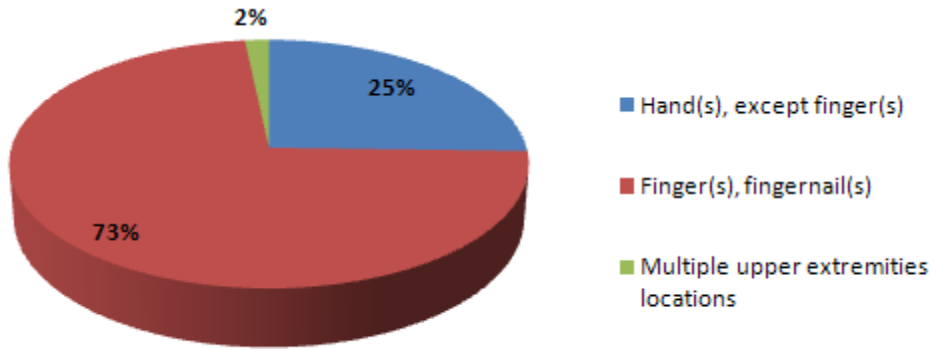
4.2 Part of body injured

100 % (386) of claims examined in this section contained information on the part of body injured.

Table 10: Most common part of body classifications

Major group	Minor group	All claims		Disabling injuries		Lost time claims	
		#	% total	#	% claims	#	% claims
Hand(s), except finger(s)	Hand(s), except finger(s)	15	100.0	11	73.3	2	13.3
	Total	15	100.0				
Finger(s), fingernail(s)	Finger(s), fingernail(s), UNS	10	23.3	8	80.0	3	30.0
	Thumb or thumb and other finger(s)	4	9.3	4	100.0	0	0.0
	Finger(s), except thumb	28	65.1	24	85.7	10	35.7
	Finger(s), fingernail(s), NEC	1	2.3	1	100.0	0	0.0
	Total	43	100.0				
Multiple upper extremities locations	Hand(s) and finger(s) or thumb(s)	1	100.0	0	0.0	0	0.0
	Total	1	100.0				

Figure 9: Percentage of claims by part of body injured group (all claims)



5.0 Characteristics of the injured workers

This section describes the characteristics of the workers injured from the issue under examination. Characteristics examined in this section include; the gender, age, experience (years worked before injury), and occupation of the injured workers.

5.1 Gender

100 % (59) of claims examined in this section contained information on the gender of the injured worker.

96.6 % (57) of the workers injured due to the issue under examination were male and 1.7 % (1) were female.

Table 11: Number of claims by gender and claim type

Gender	All claims		Disabling injuries		Lost time claims	
	#	% claims	#	% claims	#	% claims
Female	1	1.7	1	100.0	0	0.0
Male	57	96.6	46	80.7	15	26.3
Not elsewhere classified	1	1.7	1	100.0	0	0.0
Total	59	100.0				

5.2 Age

100.0 % (59) of claims examined in this section contained information on the age of the injured worker.

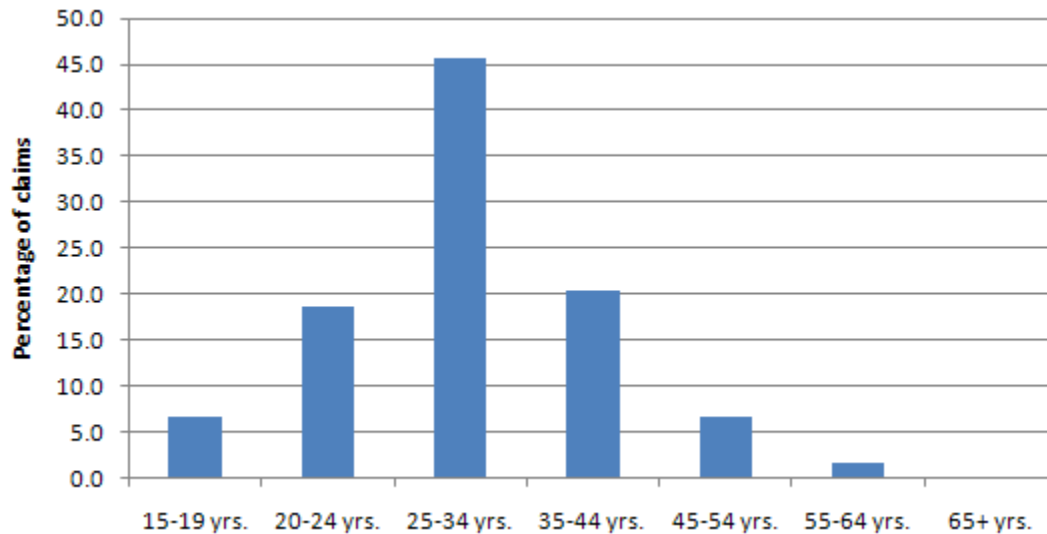
Table 12: Descriptive statistics describing age of the injured workers considered

	Claims	Mean (yrs.)	Standard deviation (yrs.)	Minimum (yrs.)	Maximum (yrs.)
All claims	59	30.8	8.8	18	55
Disabling injuries	48	31.3	8.8	18	55
Lost time claims	15	31.1	5.6	23	44

Table 13: Number of claims by age group and claim type

Age group	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
15-19 yrs.	4	6.8	4	100.0	0	0.0
20-24 yrs.	11	18.6	6	54.5	1	9.1
25-34 yrs.	27	45.8	24	88.9	11	40.7
35-44 yrs.	12	20.3	10	83.3	3	25.0
45-54 yrs.	4	6.8	3	75.0	0	0.0
55-64 yrs.	1	1.7	1	100.0	0	0.0
65+ yrs.	0	0.0	0	0.0	0	0.0
Total	59	100.0				

Figure 10: Distribution of claims across age groups (all claims)



5.3 Experience

37.3 % (22) of claims examined in this section contained information on the experience of the injured worker. Experience information is presented as years worked before the injury.

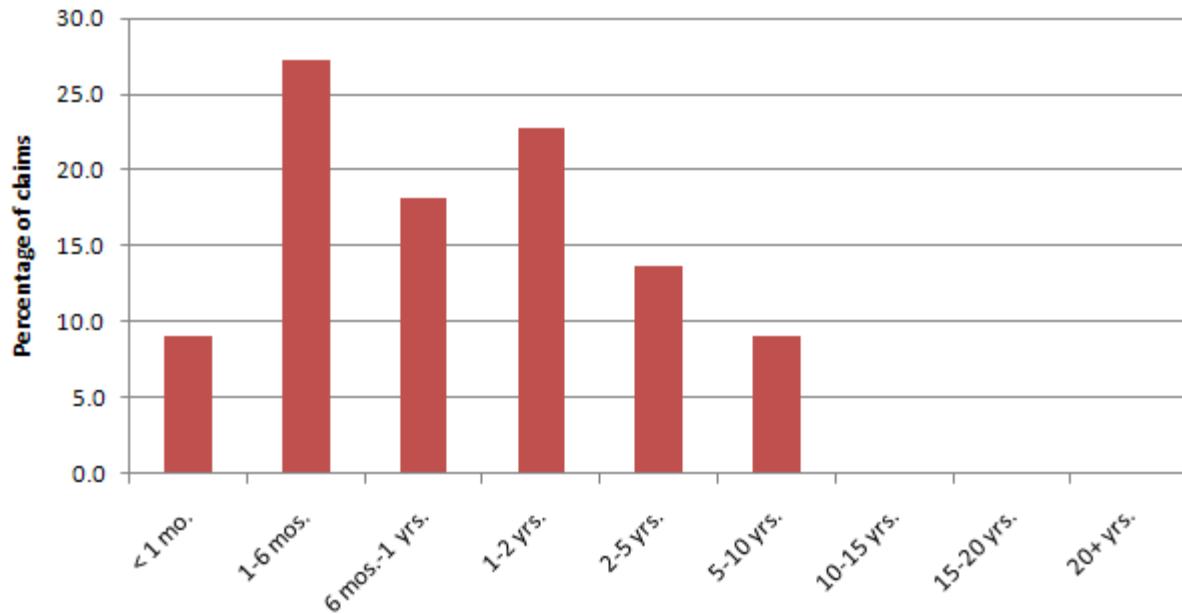
Table 14: Descriptive statistics describing experience of the injured workers considered

	Claims	Mean (yrs.)	Standard deviation (yrs.)	Minimum (yrs.)	Maximum (yrs.)
All claims	22	1.3	1.5	0.0	5.5
Disabling injuries	20	1.1	1.2	0.0	5.1
Lost time claims	10	1.1	1.6	0.1	5.1

Table 15: Number of claims by experience group and claim type

Experience group	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
< 1 mo.	2	9.1	2	100.0	1	50.0
1-6 mos.	6	27.3	6	100.0	4	66.7
6 mos.-1 yrs.	4	18.2	4	100.0	1	25.0
1-2 yrs.	5	22.7	4	80.0	2	40.0
2-5 yrs.	3	13.6	3	100.0	1	33.3
5-10 yrs.	2	9.1	1	50.0	1	50.0
10-15 yrs.	0	0.0	0	0.0	0	0.0
15-20 yrs.	0	0.0	0	0.0	0	0.0
20+	0	0.0	0	0.0	0	0.0
Total	22	100.0				

Figure 11: Distribution of claims across experience groups (all claims)



5.4 Occupation of the injured worker

100.0 % (59) of claims examined in this section contained information on the occupation of the injured worker.

Table 16: Number of claims by occupation of the injured worker and claim type

Occupation	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
Oil & Gas Drilling, Service Related Workers	12	20.3	10	83.3	6	50.0
Oil & Gas - Drilling/Service Workers	10	16.9	9	90.0	1	10.0
Oil & Gas Drilling & Svc Workers	8	13.6	7	87.5	1	12.5
NOT YET	4	6.8	3	75.0	1	25.0
Sups, Heavy Const Equip Crews	3	5.1	3	100.0	1	33.3
Welders & Related Machine Operators	3	5.1	3	100.0	1	33.3
Material Handlers	3	5.1	1	33.3	0	0.0
Other Workers in Proc, Mfg & Utilities	2	3.4	0	0.0	0	0.0
Heavy Equip Operators (Except Crane)	2	3.4	2	100.0	1	50.0
Support Jobs in Media & Arts	2	3.4	2	100.0	2	100.0

6.0 Temporal variables: Month of year and time of day

This section describes the month of the year and time of day the injuries occurred from the issue under examination.

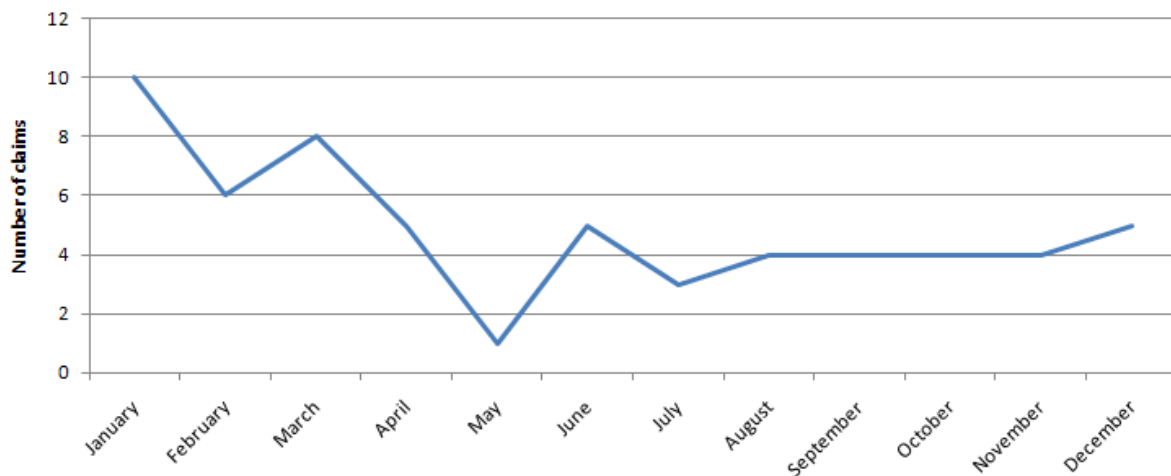
6.1 Month of occurrence

100.0 % (59) of claims examined in this section contained information on the month of occurrence.

Table 17: Number of claims by month of occurrence and claim type

Month	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
January	10	16.9	10	100.0	5	50.0
February	6	10.2	6	100.0	3	50.0
March	8	13.6	5	62.5	2	25.0
April	5	8.5	5	100.0	2	40.0
May	1	1.7	1	100.0	0	0.0
June	5	8.5	4	80.0	0	0.0
July	3	5.1	2	66.7	0	0.0
August	4	6.8	2	50.0	1	25.0
September	4	6.8	4	100.0	0	0.0
October	4	6.8	3	75.0	1	25.0
November	4	6.8	3	75.0	1	25.0
December	5	8.5	3	60.0	0	0.0
Total	59	100.0				

Figure 12: Number of claims by month of the year (all claims)





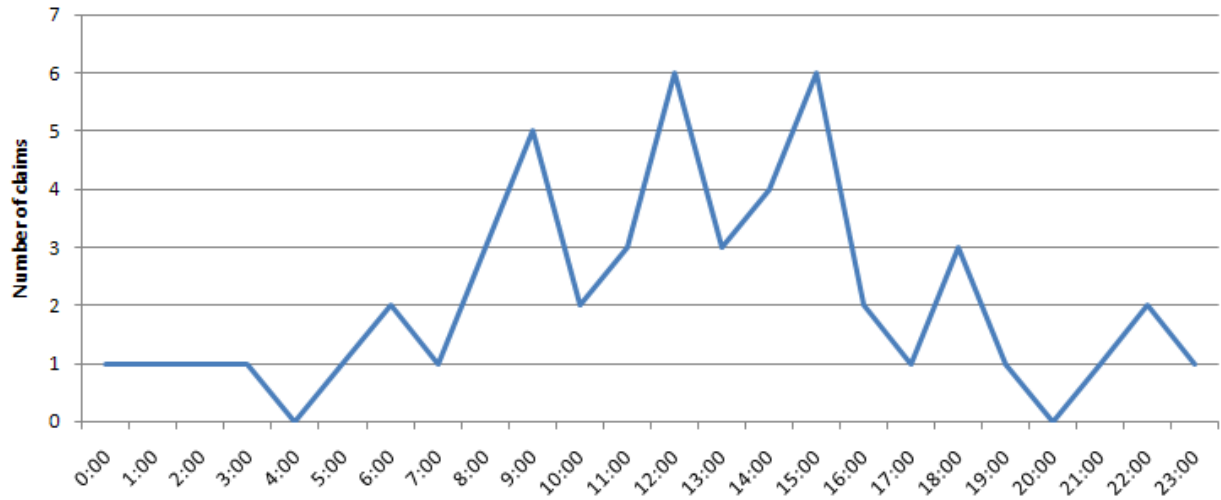
6.2 Hour of the day

86.4 % (51) of claims examined in this section contained information on the hour of occurrence.

Table 18: Number of claims by hour of occurrence and claim type

Hour	All claims		Disabling injuries		Lost time claims	
	#	% total	#	% claims	#	% claims
0:00	1	2.0	1	100.0	0	0.0
1:00	1	2.0	1	100.0	1	100.0
2:00	1	2.0	1	100.0	1	100.0
3:00	1	2.0	0	0.0	0	0.0
4:00	0	0.0	0	0.0	0	0.0
5:00	1	2.0	1	100.0	0	0.0
6:00	2	3.9	1	50.0	1	50.0
7:00	1	2.0	1	100.0	0	0.0
8:00	3	5.9	3	100.0	1	33.3
9:00	5	9.8	4	80.0	0	0.0
10:00	2	3.9	2	100.0	0	0.0
11:00	3	5.9	2	66.7	0	0.0
12:00	6	11.8	5	83.3	1	16.7
13:00	3	5.9	3	100.0	2	66.7
14:00	4	7.8	3	75.0	0	0.0
15:00	6	11.8	5	83.3	3	50.0
16:00	2	3.9	2	100.0	1	50.0
17:00	1	2.0	1	100.0	1	100.0
18:00	3	5.9	2	66.7	0	0.0
19:00	1	2.0	1	100.0	0	0.0
20:00	0	0.0	0	0.0	0	0.0
21:00	1	2.0	1	100.0	0	0.0
22:00	2	3.9	2	100.0	1	50.0
23:00	1	2.0	0	0.0	0	0.0
Total	51	100.0				

Figure 13: Number of claims by hour of occurrence (all claims)





Appendix A: General information pertaining to this report

- All claims associated with industry and employer accounts accepted by the WCB in the years examined are included in the Enform Injury and Illness Database used to generate this report. Claim types described in this report include; medical aid claims and lost time claims.
- WCB claims included in the disabling injury claim category include; medical aid claims which involve modified work, modified work only claims, and lost time claims without modified work.
- Claims included in the lost time claim category include lost time claims which involve modified work and those which do not involve modified work.
- Given the lost time claim group includes claims with and without modified work, the disabling injury claim group and lost time claim group are not mutually exclusive (some claims are considered in both groups).
- Recurrent incidences of the same injury or illness resulting in a claim within individuals are not considered separate claims in this report. Recurrence of the same injury within an individual results in the original claim being reactivated. Multiple different injuries resulting in claims within an individual are considered separate claims.
- Costs and time loss figures reported here reflect the claims costs and time loss days accrued from January 1 of the year of occurrence to March 31 of the following year. A 15 month collection window has been used to limit the ability of claims occurring in earlier years to accrue more claims costs and time loss than claims occurring in subsequent years.
- The reliability of a statistic or trend is affected by the number of data points (claims) considered in generating the statistic or trend. As a general rule, 30 data points (claims) are required to arrive at a stable trend or statistic. A description of the number of claims considered in statistics and trends reported is included in each section of this report to enable the reader to assess the strength of conclusions that may be drawn.
- In an effort to maximize reliability issues and trends identified in this report, all claims are considered across the period examined and not each year individually.
- Employer size comparisons are based on person year estimates calculated using the WCB of industry average wage figure.

$$\text{Person years} = \frac{\text{WCB Total insurable earnings}}{\text{WCB Industry average wage} \times 2,000 \text{ hours}}$$



Appendix B: Content of Enform Level 1 industry and Enform employer reports

Intervention road map

1. Identify issues and trends of concern;
 - a. Review Enform level 1 industry report summarizing industry performance,
 - b. Form stakeholder group to select issues / trends for intervention,
 - c. Request Enform level 2 report(s) describing specific issues and trends selected, and/or Enform employer report(s) describing employer specific performance.
2. Intervention design process facilitated by Enform;
 - a. Identify real world context of issues and trends described in Enform level 2 reports, and/or Enform employer reports,
 - b. Design intervention(s) and identify method of evaluating effectiveness.
3. Implement intervention.
4. Measure effect of intervention.
5. Review initiative results and, if necessary, modify to realize continuous improvement.

Enform level 1 industry reports

Enform level 1 industry reports summarize health and safety performance across the industry examined. It is the purpose of Enform level 1 industry reports to provide a description of overall health and safety performance and identify issues and trends for further study in partnership with stakeholders.

Enform level 1 industry reports describe; the industrial activity taking place (e.g., number of employers, total insurable earnings), claims experience (e.g., number of claims and classification of claims, time loss, claims cost), characteristics of the injured workers (e.g., gender, age, experience, occupation), and information on the characteristics of the injuries themselves (e.g., part of body injured). Issues and trends of concern identified for further study in Enform level 2 industry reports are also described. Enform level 1 industry reports are available by contacting Enform

Enform employer reports

Enform employer reports reveal important information concerning health and safety performance within an individual employer. It is the purpose of Enform employer reports to provide insight into how the issues and trends observed within an individual employer compare to the issues and trends observed across employer's peer group (industry). Enform employer reports describe the comparative performance of an employer and highlight circumstances where trends observed differ significantly between the employer and their peer group.



Each Enform employer report describes health and safety performance within an individual employer in terms of; claims experience (e.g., rank of employer within peer group), characteristics of workers (e.g., average age of injured worker employer vs. peer group), and characteristics of injuries and illnesses (most common part of body injured employer vs. peer group). A sample Enform employer report is available by contacting Enform.

Appendix C: Key terms and definitions

Claims cost per person year	Claims cost per person year is calculated by dividing the total claims cost by the total person years worked.
Duration rate (AEI definition)	The duration rate is calculated by dividing the number of workdays-lost (disability days) by the person-year estimate, and multiplying by 100. The result is expressed as days-lost per 100 person-years worked, and indicates, in part, the economic impact of occupational injury and disease. Duration rates are not recommended as reliable indicators of full economic cost. In addition, readers are warned that duration rates are highly unstable when based on only a few lost-time claims; it is recommended that the duration rate not be calculated based upon fewer than 30 lost-time claims.
First aid (WCB Alberta Policy manual definition)	<p>First aid is limited to a one-time treatment, with follow-up visit if needed, for observation purposes only, of injuries such as minor cuts, scrapes, scratches, treatment of minor burns, removing splinters, etc., or other minor injuries which do not require medical treatment beyond the date of accident.</p> <p>First aid is the type of treatment performed regardless of who performs the treatment. In most cases, first aid treatment is provided by a first aid practitioner. However, there may be situations when first aid treatment is provided by a physician or at a medical facility. These possibilities are more likely when:</p> <ul style="list-style-type: none"> • the hospital or health facility is the workplace, • the employer has on-site health care practitioners and health facilities, • the employer has specific contracts with health care facilities to provide first aid and health care to their workers. <p>If the professional skills of a health care professional are required, and a first aid practitioner could not have provided the care and evaluation, the treatment is not first aid and should be reported to the WCB.</p>
Lost time claim (AEI definition)	A lost time claim (LTC) is a claim for an occupational injury or disease that causes the worker to have time away from work beyond the day of injury. Included are claims receiving reimbursement of full or partial lost wages due to occupational illness or injury, or payment for permanent loss of function.
Median	The numeric value separating the higher half of distribution of numbers from the lower half.
Medical aid (WCB Alberta Policy manual definition)	<p>Medical aid includes medical and other services provided by a person licensed to practice the healing arts in Alberta, and nursing, hospitalization, drugs, dressing, x-ray treatment, special treatment, appliances, apparatuses, transportation, and any other matters and things that the Board authorizes or provides.</p> <p>Coverage is also extended when an accident results in the loss, damage, or breakage of an artificial limb, eyeglasses, dentures, etc.</p> <p>Medical aid that is considered first aid does not need to be reported to the WCB.</p>
Qualified Age	Age groups with greater than 30 claims.
Group Severity	Severity is defined by the ratio of lost time claims to medical aid claims in Alberta, the ratio of no time loss claims to time loss claims in Saskatchewan, and the ratio of serious injury claims to non serious injury claims in British Columbia.



**Standard
Deviation**

A statistical metric which describes how much variation there is from the "average" or "mean" value. A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data is spread out over a large range of values.

References:

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