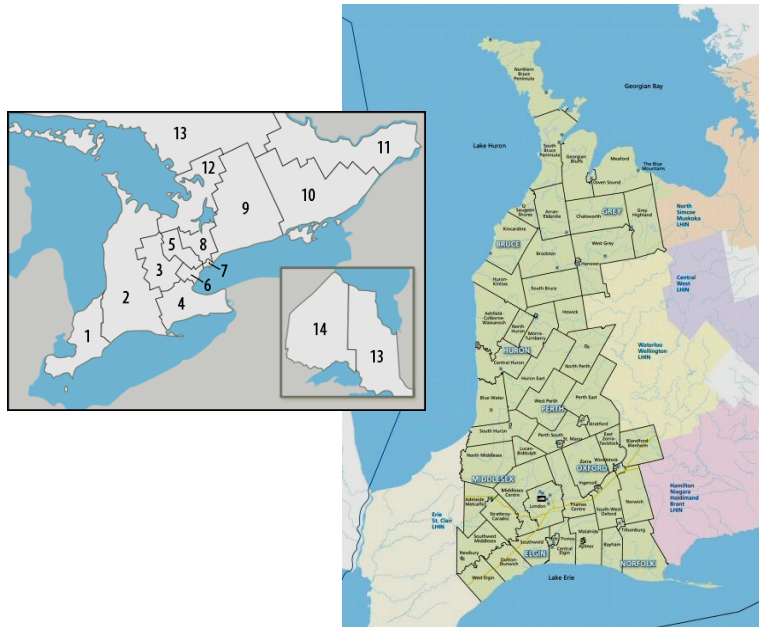


Acquired Brain Injury by Local Health Integration Network in Ontario

02 South West



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Methods

Acquired brain injury (ABI), which includes brain injury from traumatic (e.g., falls, motor vehicle collisions) and non-traumatic (e.g., anoxia, brain tumours) causes, is a leading cause of death and disability in Canada (please see Table 13 and Table 14 for a list of ABI definitions used in this report). ABI is more common than breast cancer, HIV/AIDS, spinal cord injury, and multiple sclerosis combined. The ABI Dataset Project, funded by the Ontario Neurotrauma Foundation, utilized existing administrative data to answer important research questions about ABI in Ontario that resulted from a recent publication of ABI by Local Health Integration Network (LHIN) in Ontario (please see www.onf.org → ABI → Program in Action → ABI Data).

This analysis included fiscal years 2003/04 to 2009/10. LHIN-specific analyses based on inpatient acute care data were obtained from the Discharge Abstract Database (DAD) and inpatient rehabilitation data were obtained from the National Rehabilitation Reporting System (NRS).

Six questions were addressed in this report:

1. Who is discharged to long term care from acute care?
2. Who is discharged to inpatient rehabilitation from acute care?
3. Who is living in residential care at discharge from inpatient rehabilitation?
4. What are the characteristics of ABI patients with 15+ days in alternate level of care?
5. What are the characteristics of ABI patients with extended length of stay in acute care?
6. Who is readmitted to acute care within 30 days of discharge?

Definitions of terms used in the report:

- **Alternate Level of Care (ALC):** An ALC patient is one who “has completed the acute care phase of his or her treatment but remains in the acute care bed” (CIHI 2009)
- **Charlson Comorbidity Index:** The Charlson Comorbidity Index estimates the risk of death from comorbid diseases and is calculated as an indicator of the need of patients with ABI
- **Special Care Days:** The cumulative number of days spent in all intensive care units

Who is Discharged to Long Term Care from Acute Care?

Table 1. Characteristics of TBI Patients Discharged to Long Term Care from Acute Care, 2003/04 – 2009/10

Characteristics	South West		Ontario	
	N	Col%	N	Col%
Overall	160	100	1,558	100
Age				
<19	<5	.	<5	.
19 – 54	20	12.5	NR	.
55 – 64	NR	.	128	8.2
65 – 74	13	8.1	168	10.8
75 – 84	47	29.4	520	33.4
85+	68	42.5	627	40.2
Sex				
Female	91	56.9	825	53.0
Male	69	43.1	733	47.0
Fiscal Year of Discharge				
2003/04	22	13.8	169	10.8
2004/05	14	8.8	186	11.9
2005/06	24	15.0	199	12.8
2006/07	19	11.9	221	14.2
2007/08	22	13.8	228	14.6
2008/09	22	13.8	264	16.9
2009/10	37	23.1	291	18.7
Length of Stay in Acute Care				
1 – 2	12	7.5	102	6.5
3 – 5	27	16.9	258	16.6
6 – 11	43	26.9	314	20.2
12+	78	48.8	884	56.7
Charlson Comorbidity Index Score				
0 – 1 (low)	135	84.4	1,168	75.0
2 - 3	NR	.	311	20.0
4+ (high)	<5	.	79	5.1
Psychiatric Comorbidity				
Yes	65	40.6	724	46.5
No	95	59.4	834	53.5
Number of ALC Days				
None	103	64.4	893	57.3
1 – 2	<5	.	32	2.1
3 – 5	<5	.	35	2.2
6 – 11	9	5.6	101	6.5

Characteristics	South West		Ontario	
	N	Col%	N	Col%
12+	40	25.0	497	31.9
Number of Special Care Days				
None	134	83.8	1,308	84.0
1 – 2	10	6.3	79	5.1
3 – 5	8	5.0	75	4.8
6 – 11	<5	.	51	3.3
12+	<5	.	45	2.9
Motor Vehicle Collision				
Yes	13	8.1	77	4.9
No	147	91.9	1,481	95.1
Number of Previous ABI Admissions				
0	119	74.4	1,135	72.8
1	32	20.0	315	20.2
2+	9	5.6	108	6.9

Note: NR = not reportable due to small cell size

Table 2. Characteristics of nTBI Patients Discharged to Long Term Care from Acute Care, 2003/04 – 2009/10

Characteristics	South West		Ontario	
	N	Col%	N	Col%
Overall	309	100	4,214	100
Age				
<19	0	0	<5	.
19 – 54	18	5.8	NR	.
55 – 64	32	10.4	397	9.4
65 – 74	65	21.0	755	17.9
75 – 84	118	38.2	1,619	38.4
85+	76	24.6	1,168	27.7
Sex				
Female	179	57.9	2,466	58.5
Male	130	42.1	1,748	41.5
Fiscal Year of Discharge				
2003/04	67	21.7	683	16.2
2004/05	45	14.6	688	16.3
2005/06	48	15.5	630	15.0
2006/07	37	12.0	582	13.8
2007/08	47	15.2	533	12.6
2008/09	24	7.8	569	13.5
2009/10	41	13.3	529	12.6
Length of Stay in Acute Care				
1 – 2	8	2.6	149	3.5
3 – 5	47	15.2	612	14.5
6 – 11	63	20.4	1,041	24.7
12+	191	61.8	2,412	57.2
Charlson Comorbidity Index Score				
0 – 1 (low)	142	46.0	1,832	43.5
2 – 3	94	30.4	1,406	33.4
4+ (high)	73	23.6	976	23.2
Psychiatric Comorbidity				
Yes	95	30.7	1,546	36.7
No	214	69.3	2,668	63.3
Number of ALC Days				
None	186	60.2	2,645	62.8
1 – 2	<5	.	81	1.9
3 – 5	NR	.	100	2.4
6 – 11	17	5.5	277	6.6
12+	90	29.1	1,111	26.4
Number of Special Care Days				
None	265	85.8	3,613	85.7
1 – 2	19	6.1	202	4.8
3 – 5	7	2.3	165	3.9
6 – 11	9	2.9	118	2.8

Characteristics	South West		Ontario	
	N	Col%	N	Col%
12+	9	2.9	116	2.8
Number of Previous ABI Admissions				
0	200	64.7	2,868	68.1
1	67	21.7	848	20.1
2+	42	13.6	498	11.8

Note: NR = not reportable due to small cell size

Who is Discharged to Inpatient Rehabilitation from Acute Care?

Table 3. Characteristics of TBI Patients Discharged to Inpatient Rehabilitation from Acute Care, 2003/04 – 2009/10

Characteristics	South West		Ontario	
	N	Col%	N	Col%
Overall	265	100	3,248	100
Age				
<19	34	12.8	182	5.6
19 – 54	120	45.3	1,276	39.3
55 – 64	26	9.8	382	11.8
65 – 74	25	9.4	454	14.0
75 – 84	40	15.1	659	20.3
85+	20	7.5	295	9.1
Sex				
Female	81	30.6	1,144	35.2
Male	184	69.4	2,104	64.8
Fiscal Year of Discharge				
2003/04	34	12.8	375	11.5
2004/05	28	10.6	396	12.2
2005/06	40	15.1	423	13.0
2006/07	38	14.3	471	14.5
2007/08	41	15.5	522	16.1
2008/09	40	15.1	515	15.9
2009/10	44	16.6	546	16.8
Length of Stay in Acute Care				
1 – 2	6	2.3	22	0.7
3 – 5	13	4.9	159	4.9
6 – 11	62	23.4	642	19.8
12+	184	69.4	2,425	74.7
Charlson Comorbidity Index Score				
0 – 1 (low)	236	89.1	2,804	86.3
2 - 3	NR	.	389	12.0
4+ (high)	<5	.	55	1.7
Psychiatric Comorbidity				
Yes	53	20.0	667	20.5
No	212	80.0	2,581	79.5
Number of ALC Days				
None	178	67.2	1,669	51.4
1 – 2	14	5.3	232	7.1
3 – 5	16	6.0	281	8.7
6 – 11	24	9.1	456	14.0

Characteristics	South West		Ontario	
	N	Col%	N	Col%
12+	33	12.5	610	18.8
Number of Special Care Days				
None	106	40.0	1,429	44.0
1 – 2	34	12.8	351	10.8
3 – 5	38	14.3	376	11.6
6 – 11	38	14.3	423	13.0
12+	49	18.5	669	20.6
Motor Vehicle Collision				
Yes	104	39.2	1,003	30.9
No	161	60.8	2,245	69.1
Number of Previous ABI Admissions				
0	190	71.7	2,294	70.6
1	57	21.5	771	23.7
2+	18	6.8	183	5.6

Note: NR = not reportable due to small cell size

Table 4. Characteristics of nTBI Patients Discharged to Inpatient Rehabilitation from Acute Care, 2003/04 – 2009/10

Characteristics	South West		Ontario	
	N	Col%	N	Col%
Overall	310	100	4,936	100
Age				
<19	9	2.9	51	1.0
19 – 54	102	32.9	1,325	26.8
55 – 64	48	15.5	931	18.9
65 – 74	62	20.0	1,060	21.5
75 – 84	72	23.2	1,193	24.2
85+	17	5.5	376	7.6
Sex				
Female	145	46.8	2,293	46.5
Male	165	53.2	2,643	53.5
Fiscal Year of Discharge				
2003/04	43	13.9	605	12.3
2004/05	34	11.0	646	13.1
2005/06	52	16.8	697	14.1
2006/07	46	14.8	714	14.5
2007/08	53	17.1	714	14.5
2008/09	41	13.2	744	15.1
2009/10	41	13.2	816	16.5
Length of Stay in Acute Care				
1 – 2	<5	.	50	1.0
3 – 5	NR	.	271	5.5
6 – 11	55	17.7	1,037	21.0
12+	233	75.2	3,578	72.5
Charlson Comorbidity Index Score				
0 – 1 (low)	171	55.2	2,613	52.9
2 – 3	84	27.1	1,436	29.1
4+ (high)	55	17.7	887	18.0
Psychiatric Comorbidity				
Yes	46	14.8	836	16.9
No	264	85.2	4,100	83.1
Number of ALC Days				
None	192	61.9	2,660	53.9
1 – 2	20	6.5	399	8.1
3 – 5	24	7.7	460	9.3
6 – 11	34	11.0	639	12.9
12+	40	12.9	778	15.8
Number of Special Care Days				
None	155	50.0	2,710	54.9
1 – 2	37	11.9	627	12.7
3 – 5	26	8.4	482	9.8
6 – 11	30	9.7	436	8.8

Characteristics	South West		Ontario	
	N	Col%	N	Col%
12+	62	20.0	681	13.8
Number of Previous ABI Admissions				
0	177	57.1	2,848	57.7
1	85	27.4	1,322	26.8
2+	48	15.5	766	15.5

Note: NR = not reportable due to small cell size

Who Lives in Residential Care* at Discharge from Inpatient Rehabilitation?

* This analysis combined data for ABI patients living in a residential care facility and those living in assisted living settings at discharge from inpatient rehabilitation.

Table 5. Characteristics of TBI Patients Living in Residential Care at Discharge from Inpatient Rehabilitation, 2003/04 - 2009/10

Characteristics	South West		Ontario	
	N	Col%	N	Col%
Overall	34	100	431	100
Age				
19 – 54	11	32.4	136	31.6
55 – 64	<5	.	49	11.4
65 – 74	<5	.	55	12.8
75 – 84	8	23.5	117	27.1
85+	9	26.5	74	17.2
Sex				
Female	17	50.0	183	42.5
Male	17	50.0	248	57.5
Fiscal Year of Discharge				
2003/04	6	17.6	70	16.2
2004/05	<5	.	65	15.1
2005/06	<5	.	57	13.2
2006/07	6	17.6	67	15.5
2007/08	7	20.6	63	14.6
2008/09	<5	.	68	15.8
2009/10	<5	.	41	9.5
Length of Stay in Acute Care				
1 – 2	<5	.	6	1.4
3 – 5	<5	.	18	4.2
6 – 11	<5	.	67	15.5
12+	25	73.5	340	78.9
Charlson Comorbidity Index Score				
0 – 1 (low)	NR	.	358	83.1
2 - 3	<5	.	61	14.2
4+ (high)	0	0	12	2.8
Psychiatric Comorbidity				
Yes	6	17.6	97	22.5
No	28	82.4	334	77.5
Number of ALC Days				
None	19	55.9	210	48.7
1 – 2	0	0	21	4.9

Characteristics	South West		Ontario	
	N	Col%	N	Col%
3 – 5	<5	.	28	6.5
6 – 11	NR	.	65	15.1
12+	7	20.6	107	24.8
Number of Special Care Days				
None	16	47.1	187	43.4
1 – 2	<5	.	48	11.1
3 – 5	<5	.	42	9.7
6 – 11	6	17.6	50	11.6
12+	<5	.	104	24.1
Motor Vehicle Collision				
Yes	8	23.5	120	27.8
No	26	76.5	311	72.2
Number of Previous ABI Admissions				
0	28	82.4	333	77.3
1	<5	.	81	18.8
2+	<5	.	17	3.9

Note: NR = not reportable due to small cell size

Table 6. Characteristics of nTBI Patients Living in Residential Care at Discharge from Inpatient Rehabilitation, 2003/04 - 2009/10

Characteristics	South West		Ontario	
	N	Col%	N	Col%
Overall	40	100	525	100
Age				
19 – 54	8	20.0	135	25.7
55 – 64	<5	.	74	14.1
65 – 74	8	20.0	96	18.3
75 – 84	13	32.5	157	29.9
85+	NR	.	63	12.0
Sex				
Female	26	65.0	268	51.0
Male	14	35.0	257	49.0
Fiscal Year of Discharge				
2003/04	6	15.0	82	15.6
2004/05	9	22.5	94	17.9
2005/06	<5	.	71	13.5
2006/07	9	22.5	85	16.2
2007/08	7	17.5	65	12.4
2008/09	<5	.	70	13.3
2009/10	<5	.	58	11.0
Length of Stay in Acute Care				
1 – 2	0	0	13	2.5
3 – 5	NR	.	43	8.2
6 – 11	<5	.	81	15.4
12+	31	77.5	388	73.9
Charlson Comorbidity Index Score				
0 – 1 (low)	17	42.5	303	57.7
2 - 3	15	37.5	170	32.4
4+ (high)	8	20.0	52	9.9
Psychiatric Comorbidity				
Yes	<5	.	113	21.5
No	NR	.	412	78.5
Number of ALC Days				
None	23	57.5	279	53.1
1 – 2	<5	.	28	5.3
3 – 5	<5	.	45	8.6
6 – 11	<5	.	64	12.2
12+	6	15.0	109	20.8
Number of Special Care Days				
None	26	65.0	298	56.8
1 – 2	<5	.	44	8.4
3 – 5	<5	.	43	8.2
6 – 11	<5	.	49	9.3

Characteristics	South West		Ontario	
	N	Col%	N	Col%
12+	8	20.0	91	17.3
Number of Previous ABI Admissions				
0	35	87.5	394	75.0
1	<5	.	101	19.2
2+	<5	.	30	5.7

Note: NR = not reportable due to small cell size

What are the Characteristics of ABI Patients with 15+ Days in ALC*?

* This analysis focused on the characteristics of ABI patients with 15+ days in ALC as a result of feedback received from LHINs on the recently published ABI reports.

Table 7. Characteristics of TBI Patients with 15+ Days in ALC, 2003/04 - 2009/10

Characteristics	South West		Ontario	
	N	Col%	N	Col%
Overall	101	100	1,791	100
Age				
<19	0	0	31	1.7
19 – 54	21	20.8	413	23.1
55 – 64	9	8.9	206	11.5
65 – 74	9	8.9	255	14.2
75 – 84	29	28.7	464	25.9
85+	33	32.7	422	23.6
Sex				
Female	50	49.5	698	39.0
Male	51	50.5	1,093	61.0
Fiscal Year of Discharge				
2003/04	10	9.9	181	10.1
2004/05	13	12.9	204	11.4
2005/06	14	13.9	181	10.1
2006/07	9	8.9	233	13.0
2007/08	13	12.9	304	17.0
2008/09	19	18.8	335	18.7
2009/10	23	22.8	353	19.7
Charlson Comorbidity Index Score				
0 – 1 (low)	79	78.2	1,361	76.0
2 - 3	NR	.	327	18.3
4+ (high)	<5	.	103	5.8
Psychiatric Comorbidity				
Yes	44	43.6	747	41.7
No	57	56.4	1,044	58.3
Number of Special Care Days				
None	70	69.3	1,071	59.8
1 – 2	<5	.	99	5.5
3 – 5	12	11.9	139	7.8
6 – 11	NR	.	150	8.4
12+	8	7.9	332	18.5
Motor Vehicle Collision				
Yes	18	17.8	299	16.7

Characteristics	South West		Ontario	
	N	Col%	N	Col%
No	83	82.2	1,492	83.3
Number of Previous ABI Admissions				
0	74	73.3	1,215	67.8
1	NR	.	462	25.8
2+	<5	.	114	6.4
Discharge Destination ¹				
Death	8	7.9	135	7.5
Home	21	20.8	378	21.1
Inpatient Rehabilitation	26	25.7	479	26.7
Long Term Care	34	33.7	442	24.7
Transferred ²	10	9.9	350	19.5

Note: NR = not reportable due to small cell size

¹ Missing values were excluded and thus, column percentages may not add up to 100%

² Transferred includes transferred to another facility providing inpatient hospital care and to other

Table 8. Characteristics of nTBI Patients with 15+ Days in ALC, 2003/04 - 2009/10

Characteristics	South West		Ontario	
	N	Col%	N	Col%
Overall	291	100	4,662	100
Age				
<19	0	0	16	0.3
19 – 54	43	14.8	812	17.4
55 – 64	59	20.3	771	16.5
65 – 74	59	20.3	1,019	21.9
75 – 84	95	32.6	1,425	30.6
85+	35	12.0	619	13.3
Sex				
Female	144	49.5	2,260	48.5
Male	147	50.5	2,402	51.5
Fiscal Year of Discharge				
2003/04	40	13.7	648	13.9
2004/05	38	13.1	554	11.9
2005/06	36	12.4	585	12.5
2006/07	33	11.3	645	13.8
2007/08	55	18.9	718	15.4
2008/09	45	15.5	760	16.3
2009/10	44	15.1	752	16.1
Charlson Comorbidity Index Score				
0 – 1 (low)	90	30.9	1,571	33.7
2 - 3	82	28.2	1,423	30.5
4+ (high)	119	40.9	1,668	35.8
Psychiatric Comorbidity				
Yes	80	27.5	1,491	32.0
No	211	72.5	3,171	68.0
Number of Special Care Days				
None	232	79.7	3,309	71.0
1 – 2	8	2.7	226	4.8
3 – 5	9	3.1	257	5.5
6 – 11	12	4.1	297	6.4
12+	30	10.3	573	12.3
Number of Previous ABI Admissions				
0	150	51.5	2,837	60.9
1	87	29.9	1,151	24.7
2+	54	18.6	674	14.5
Discharge Destination ¹				
Death	92	31.6	1,054	22.6
Home	33	11.3	780	16.7
Inpatient Rehabilitation	32	11.0	599	12.8
Long Term Care	77	26.5	973	20.9

Characteristics	South West		Ontario	
	N	Col%	N	Col%
Transferred ²	57	19.6	1,241	26.6

Note: ¹ Missing values were excluded and thus, column percentages may not add up to 100%

² Transferred includes transferred to another facility providing inpatient hospital care and to other

Who is Discharged with Extended Length of Stay* in Acute Care?

* Extended length of stay (LOS) is defined as LOS in the 75th percentile and higher.

Table 9. Characteristics of TBI Patients Discharged with Extended Length of Stay in Acute Care, 2003/04 - 2009/10

Characteristics	South West		Ontario	
	N	Col%	N	Col%
Overall	713	100	9,399	100
Age				
<19	75	10.5	912	9.7
19 – 54	209	29.3	2,822	30.0
55 – 64	72	10.1	958	10.2
65 – 74	77	10.8	1,266	13.5
75 – 84	162	22.7	2,059	21.9
85+	118	16.5	1,382	14.7
Sex				
Female	284	39.8	3,454	36.7
Male	429	60.2	5,945	63.3
Fiscal Year of Discharge				
2003/04	91	12.8	1,169	12.4
2004/05	101	14.2	1,296	13.8
2005/06	102	14.3	1,269	13.5
2006/07	101	14.2	1,286	13.7
2007/08	99	13.9	1,407	15.0
2008/09	86	12.1	1,414	15.0
2009/10	133	18.7	1,558	16.6
Charlson Comorbidity Index Score				
0 – 1 (low)	571	80.1	7,539	80.2
2 - 3	115	16.1	1,437	15.3
4+ (high)	27	3.8	423	4.5
Psychiatric Comorbidity				
Yes	201	28.2	2,948	31.4
No	512	71.8	6,451	68.6
Number of ALC Days				
None	491	68.9	5,545	59.0
1 – 2	18	2.5	256	2.7
3 – 5	23	3.2	433	4.6
6 – 11	58	8.1	1,005	10.7
12+	123	17.3	2,160	23.0
Number of Special Care Days				
None	343	48.1	4,529	48.2
1 – 2	62	8.7	730	7.8

Characteristics	South West		Ontario	
	N	Col%	N	Col%
3 – 5	82	11.5	1,052	11.2
6 – 11	114	16.0	1,248	13.3
12+	112	15.7	1,840	19.6
Motor Vehicle Collision				
Yes	185	25.9	2,203	23.4
No	528	74.1	7,196	76.6
Number of Previous ABI Admissions				
0	510	71.5	6,706	71.3
1	142	19.9	2,097	22.3
2+	61	8.6	596	6.3
Discharge Destination ¹				
Death	92	12.9	890	9.5
Home	245	34.4	3,641	38.7
Inpatient Rehabilitation	176	24.7	2,303	24.5
Long Term Care	75	10.5	851	9.1
Transferred ²	119	16.7	1,677	17.8

Note: ¹ Missing values were excluded and thus, column percentages may not add up to 100%

² Transferred includes transferred to another facility providing inpatient hospital care and to other

Table 10. Characteristics of nTBI Patients Discharged with Extended Length of Stay in Acute Care, 2003/04 – 2009/10

Characteristics	South West		Ontario	
	N	Col%	N	Col%
Overall	2,236	100	29,710	100
Age				
<19	164	7.3	2,315	7.8
19 – 54	481	21.5	6,357	21.4
55 – 64	443	19.8	5,387	18.1
65 – 74	504	22.5	6,511	21.9
75 – 84	499	22.3	6,807	22.9
85+	145	6.5	2,333	7.9
Sex				
Female	1,126	50.4	14,355	48.3
Male	1,110	49.6	15,355	51.7
Fiscal Year of Discharge				
2003/04	347	15.5	4,445	15.0
2004/05	325	14.5	4,273	14.4
2005/06	361	16.1	4,294	14.5
2006/07	297	13.3	4,039	13.6
2007/08	288	12.9	4,045	13.6
2008/09	304	13.6	4,251	14.3
2009/10	314	14.0	4,363	14.7
Charlson Comorbidity Index Score				
0 – 1 (low)	777	34.7	10,238	34.5
2 – 3	570	25.5	8,033	27.0
4+ (high)	889	39.8	11,439	38.5
Psychiatric Comorbidity				
Yes	402	18.0	6,413	21.6
No	1,834	82.0	23,297	78.4
Number of ALC Days				
None	1,661	74.3	20,085	67.6
1 – 2	36	1.6	644	2.2
3 – 5	52	2.3	1,008	3.4
6 – 11	132	5.9	2,285	7.7
12+	355	15.9	5,688	19.1
Number of Special Care Days				
None	1,352	60.5	18,596	62.6
1 – 2	150	6.7	1,958	6.6
3 – 5	141	6.3	2,025	6.8
6 – 11	195	8.7	2,454	8.3
12+	398	17.8	4,677	15.7
Number of Previous ABI Admissions				
0	1,384	61.9	18,246	61.4
1	496	22.2	6,867	23.1
2+	356	15.9	4,597	15.5

Characteristics	South West		Ontario	
	N	Col%	N	Col%
Discharge Destination ¹				
Death	637	28.5	7,645	25.7
Home	851	38.1	11,618	39.1
Inpatient Rehabilitation	203	9.1	2,930	9.9
Long Term Care	164	7.3	2,027	6.8
Transferred ²	378	16.9	5,418	18.2

Note: ¹ Missing values were excluded and thus, column percentages may not add up to 100%

² Transferred includes transferred to another facility providing inpatient hospital care and to other

Who is Readmitted to Acute Care within One Month of Discharge?

Table 11. Characteristics of TBI Patients Readmitted to Acute Care within One Month of Discharge, 2003/04 - 2008/09

Characteristics	South West (N = 2,801)		Ontario (N = 30,579)	
	N	Col%	N	Col%
Overall	96	100	1,220	100
Age				
<19	13	13.5	199	16.3
19 – 54	45	46.9	386	31.6
55 – 64	<5	.	144	11.8
65 – 74	NR	.	160	13.1
75 – 84	18	18.8	235	19.3
85+	8	8.3	96	7.9
Sex				
Female	27	28.1	360	29.5
Male	69	71.9	860	70.5
Fiscal Year of Discharge				
2003/04	16	16.7	163	13.4
2004/05	18	18.8	238	19.5
2005/06	21	21.9	224	18.4
2006/07	17	17.7	190	15.6
2007/08	10	10.4	186	15.2
2008/09	14	14.6	219	18.0
Length of Stay in Acute Care				
1 – 2	22	22.9	194	15.9
3 – 5	30	31.3	410	33.6
6 – 11	17	17.7	282	23.1
12+	27	28.1	334	27.4
Charlson Comorbidity Index Score				
0 – 1 (low)	88	91.7	1,068	87.5
2 - 3	<5	.	124	10.2
4+ (high)	<5	.	28	2.3
Psychiatric Comorbidity				
Yes	23	24.0	277	22.7
No	73	76.0	943	77.3
Number of ALC Days				
None	90	93.8	1,099	90.1
1 – 2	<5	.	22	1.8
3 – 5	<5	.	18	1.5
6 – 11	0	0	28	2.3
12+	0	0	53	4.3

Characteristics	South West (N = 2,801)		Ontario (N = 30,579)	
	N	Col%	N	Col%
Number of Special Care Days				
None	75	78.1	867	71.1
1 – 2	11	11.5	170	13.9
3 – 5	5	5.2	86	7.0
6 – 11	5	5.2	53	4.3
12+	0	0	44	3.6
Motor Vehicle Collision				
Yes	13	13.5	164	13.4
No	83	86.5	1,056	86.6
Number of Previous ABI Admissions				
0	<5	.	76	6.2
1	57	59.4	755	61.9
2+	NR	.	389	31.9
Discharge Destination ¹				
Home	70	72.9	911	74.7
Inpatient Rehabilitation	8	8.3	111	9.1
Long Term Care	7	7.3	54	4.4
Transferred ²	11	11.5	142	11.6

Note: NR = not reportable due to small cell size

¹ Missing values were excluded and thus, column percentages may not add up to 100%

² Transferred includes transferred to another facility providing inpatient hospital care and to other

Table 12. Characteristics of nTBI Patients Readmitted to Acute Care within One Month of Discharge, 2003/04 - 2008/09

Characteristics	South West (N = 7,814)		Ontario (N = 97,700)	
	N	Col%	N	Col%
Overall	769	100	9,300	100
Age				
<19	106	13.8	1,569	16.9
19 – 54	208	27.0	2,688	28.9
55 – 64	187	24.3	1,904	20.5
65 – 74	157	20.4	1,794	19.3
75 – 84	93	12.1	1,144	12.3
85+	18	2.3	201	2.2
Sex				
Female	393	51.1	4,165	44.8
Male	376	48.9	5,135	55.2
Fiscal Year of Discharge				
2003/04	96	12.5	1,562	16.8
2004/05	118	15.3	1,492	16.0
2005/06	143	18.6	1,561	16.8
2006/07	119	15.5	1,578	17.0
2007/08	135	17.6	1,553	16.7
2008/09	158	20.5	1,554	16.7
Length of Stay in Acute Care				
1 – 2	109	14.2	1,169	12.6
3 – 5	252	32.8	2,928	31.5
6 – 11	224	29.1	2,747	29.5
12+	184	23.9	2,456	26.4
Charlson Comorbidity Index Score				
0 – 1 (low)	191	24.8	2,425	26.1
2 - 3	231	30.0	2,642	28.4
4+ (high)	347	45.1	4,233	45.5
Psychiatric Comorbidity				
Yes	34	4.4	666	7.2
No	735	95.6	8,634	92.8
Number of ALC Days				
None	732	95.2	8,812	94.8
1 – 2	<5	.	73	0.8
3 – 5	NR	.	97	1.0
6 – 11	9	1.2	145	1.6
12+	15	2.0	173	1.9
Number of Special Care Days				
None	650	84.5	7,802	83.9
1 – 2	68	8.8	921	9.9
3 – 5	28	3.6	324	3.5
6 – 11	NR	.	152	1.6
12+	<5	.	101	1.1

Characteristics	South West (N = 7,814)		Ontario (N = 97,700)	
	N	Col%	N	Col%
Number of Previous ABI Admissions				
0	9	1.2	92	1.0
1	252	32.8	3,220	34.6
2+	508	66.1	5,988	64.4
Discharge Destination ¹				
Home	695	90.4	8,234	88.5
Inpatient Rehabilitation	20	2.6	303	3.3
Long Term Care	13	1.7	146	1.6
Transferred ²	41	5.3	611	6.6

Note: NR = not reportable due to small cell size

¹ Missing values were excluded and thus, column percentages may not add up to 100%

² Transferred includes transferred to another facility providing inpatient hospital care and to other

ICD-10 Definitions of ABI

Table 13. ICD-10 Definition of TBI

Diagnosis	ICD-10 Code and Description
1. Fracture and crushing of the skull and facial bones	<ul style="list-style-type: none"> ✓ S02.0 Fracture of vault of skull ✓ S02.1 Fracture of base of skull ✓ S02.3 Fracture of the orbital floor ✓ S02.7 Multiple fractures involving skull and facial bones ✓ S02.8 Fractures of other skull and facial bones ✓ S02.9 Fractures of skull and facial bones, part unspecified ✓ S07.1 Crushing injury of skull
2. Intracranial injury, excluding those with skull fracture	<ul style="list-style-type: none"> ✓ S06.0 Concussion ✓ S06.1 Traumatic cerebral oedema ✓ S06.2 Diffuse brain injury ✓ S06.3 Focal brain injury ✓ S06.4 Epidural hemorrhage ✓ S06.5 Traumatic subdural hemorrhage ✓ S06.6 Traumatic subarachnoid hemorrhage ✓ S06.7 Intracranial injury with prolonged coma ✓ S06.8 Other intracranial injuries ✓ S06.9 Intracranial injury, unspecified
3. Late effects of injuries The "sequelae" include conditions specified as such or as late effects, or those present one year or more after onset of the causal condition.	<ul style="list-style-type: none"> ✓ F07.2 Post concussion syndrome ✓ T90.2 Sequelae of fracture of skull and facial bones ✓ T90.5 Sequelae of intracranial injury

Table 14. ICD-10 Definition of nTBI

Diagnosis	ICD-10 Code and Description
1. Toxic effect of substances, chiefly non-medical as to source	<ul style="list-style-type: none"> ✓ T40.5 Poisoning: cocaine ✓ T42.6 Poisoning by other antiepileptic and sedative-hypnotic drugs, Methaqualone, Valproic acid ✓ T51 Toxic effect of alcohol ✓ T56 Toxic effect of metals ✓ T57.0 Toxic effect of arsenic and its compounds ✓ T57.2 Toxic effect of manganese and its compounds ✓ T57.3 Toxic effect of hydrogen cyanide ✓ T58 Toxic effect of carbon monoxide ✓ T64 Toxic effect of aflatoxin and other mycotoxin food contaminants ✓ T65.0 Toxic effect of cyanides
2. Anoxia	<ul style="list-style-type: none"> ✓ G93.1 Anoxic brain damage (includes all causes of anoxia except those occurring following abortions, ectopic pregnancy, labour and delivery and newborn) ✓ T71 Asphyxiation, suffocation (by strangulation) ✓ T75.1 Drowning and nonfatal submersion ✓ R09.0 Asphyxia
3. Vascular insults (not captured in stroke analyses)	<ul style="list-style-type: none"> ✓ I62.0 Subdural hemorrhage ✓ I62.9 Unspecified intracranial hemorrhage
4. Brain tumours	<ul style="list-style-type: none"> ✓ C70 Malignant neoplasm of brain ✓ C71 Malignant neoplasm of brain ✓ C79.3 Secondary malignant neoplasm of brain and cerebral meninges ✓ C79.4 Secondary malignant neoplasm of other and unspecified part of nervous system ✓ D32.0 Benign neoplasm of cerebral meninges ✓ D33.0 Benign neoplasm of brain, supratentorial ✓ D33.1 Benign neoplasm of brain, infratentorial ✓ D33.2 Benign neoplasm of brain, unspecified ✓ D33.3 Benign neoplasm of cranial nerves ✓ D42.0 Neoplasm of uncertain or unknown behaviour of cerebral meninges ✓ D43 Neoplasm of uncertain or unknown behaviour of brain and central nervous system ✓ D43.2 Neoplasm of brain, unspecified ✓ G06.0 Intracranial abscess and granuloma ✓ G06.1 Intraspinial abscess and granuloma ✓ G06.2 Extradural and subdural abscess, unspecified ✓ G07 Intracranial and intraspinal abscess and granuloma in disease classified elsewhere ✓ G93.0 Cerebral cysts

Diagnosis	ICD-10 Code and Description
5. Encephalitis	<ul style="list-style-type: none"> ✓ A81.1 Subacute, sclerosing encephalitis ✓ A83.0 Japanese encephalitis ✓ A83.2 Eastern equine encephalitis ✓ A86.0 Unspecified viral encephalitis ✓ B00.4 Herpes viral meningoencephalitis ✓ B01.1 Varicella encephalitis ✓ B02.0 Zoster encephalitis ✓ B05.0 Postmeasles encephalitis ✓ B94.1 Sequelae of viral encephalitis ✓ G04.0 Acute disseminated encephalitis ✓ G04.2 Bacterial meningoencephalitis and meningomyelitis, not elsewhere classified ✓ G04.8 Other encephalitis, myelitis and encephalomyelitis ✓ G04.9 Encephalitis, myelitis, and encephalomyelitis, unspecified ✓ G05 Encephalitis, myelitis, and encephalomyelitis in diseases classified elsewhere ✓ G09 Sequelae of inflammatory diseases of central nervous system
6. Metabolic encephalopathies	<ul style="list-style-type: none"> ✓ E10.0 (Type I) ✓ E11.0 (Type II) ✓ E13.0 Other specified diabetes mellitus with coma ✓ E14.0 Unspecified diabetes mellitus with coma ✓ E15 Nondiabetic hypoglycaemic coma ✓ G92 Toxic encephalopathy ✓ G93.4 Encephalopathy, unspecified
7. Meningitis	<ul style="list-style-type: none"> ✓ A87 Viral meningitis ✓ B01.0 Varicella meningitis ✓ B37.5 Candidal meningitis ✓ G00 Bacterial meningitis, not elsewhere classified ✓ G01 Meningitis in bacterial diseases classified elsewhere ✓ G02 Meningitis in other infectious and parasitic diseases classified elsewhere ✓ G03 Meningitis due to other and unspecified causes
8. Other brain disorders and infections	<ul style="list-style-type: none"> ✓ G91.0 Communicating hydrocephalus ✓ G91.1 Obstructive hydrocephalus ✓ G91.2 Normal-pressure hydrocephalus ✓ G93.2 Benign intracranial hypertension ✓ G93.5 Compression of brain ✓ G93.6 Cerebral oedema ✓ G93.8 Other specified disorders of the brain (including post-radiation encephalopathy) ✓ G93.9 Disorder of the brain, unspecified ✓ G99.8 Other specified disorders of nervous system in diseases classified elsewhere ✓ R29.1 Meningismus