

2013-04-29

# Comparison of At-Fault and No-Fault Motor Vehicle Accident Insurance in Access to Benefits for Claimants Sustaining Traumatic Brain Injury

Tasker, Lee

---

Tasker, L. (2013). Comparison of At-Fault and No-Fault Motor Vehicle Accident Insurance in Access to Benefits for Claimants Sustaining Traumatic Brain Injury (Doctoral thesis, University of Calgary, Calgary, Canada). Retrieved from <https://prism.ucalgary.ca>. doi:10.11575/PRISM/25373 <http://hdl.handle.net/11023/638>

*Downloaded from PRISM Repository, University of Calgary*

UNIVERSITY OF CALGARY

Comparison of At-Fault and No-Fault Motor Vehicle Accident Insurance in Access to Benefits  
for Claimants Sustaining Traumatic Brain Injury

by

Lee Tasker

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES  
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE  
DEGREE OF DOCTOR OF PHILOSOPHY

INTERDISCIPLINARY GRADUATE PROGRAM

CALGARY, ALBERTA

APRIL, 2013

© Lee Tasker 2013

## **Abstract**

How best to compensate claimants injured in a motor vehicle accident (MVA) has been a well-debated topic for decades. Proponents of a no-fault system argue that an at-fault system is too adversarial, costly, and unresponsive in access to health care benefits, and can result in a prolonged recovery for claimants. In contrast, a no-fault system, which provides benefits to claimants regardless of fault, is viewed as more equitable and efficient and therefore fosters a better recovery. Proponents of an at-fault system, however, highlight that claimants in a no-fault system have access to only a portion of benefits they need for full restitution of their injuries to be realized. Because full restitution reflects an important societal value, and is achieved by suing an at-fault party, an at-fault system should therefore be preserved. This study compares differences between at-fault and no-fault MVA systems and between claimants with mild TBI as compared to moderate/severe TBI on measures of adversarialness, cost, responsiveness and recovery. Data from documents contained within claims files for each type of system, and by two participating MVA insurance companies in Alberta, Canada, was analysed using a mixed methods approach. Significant differences were found between: (1) at-fault and no-fault systems on measures of adversarialness and cost, both were higher in the at-fault system; and (2) mild and moderate/severe TBI groups on measures of cost and recovery, both were higher and longer, respectively, for the moderate/severe TBI group. A subsequent analysis was conducted using a four-phased claims management process: accident/fault investigation, medical/rehabilitation, claims administration, and dispute resolution phase, to identify significant key factors (and key players who participated to address these key factors) within each of these phases. The purpose was to help explain the quantitative results from the first part of the study. One of the conclusions drawn was that higher cost was significantly associated with the type of health care a

claimant accessed as part of the medical/rehabilitation phase. The thesis concludes with a discussion of implications of the results as they bear on MVA claims management practices for claimants with a TBI from an MVA.

## **Acknowledgements**

My sincere gratitude goes to my supervisor, Dr. Aldred Neufeldt. It was through your patience and guidance that I was able to complete this dissertation. I would also like to convey gratitude to my PhD committee members: Drs. Aldred Neufeldt, Raisa Deber, Norma Neilson, Professor Iwan Saunders, and the late Professor Jim Rendall, all of whom taught me the essential aspects of Community Rehabilitation and Disability Studies, Health Policy, Insurance and Risk Management, and Law as these disciplines relate to my study of interest. This committee also provided me with thoughtful feedback throughout the research and dissertation writing process.

Thank you to Dr. Linda Carroll and Dr. Anne Hughson, who agreed to act as examiners in my oral defence. I appreciate your time and interest given to my research. I would also like to acknowledge the tremendous support of Dr. Gisela Engels, without whose tutoring I would never have understood statistics! I would also like to recognize the contribution made by Ms. Viivi Riis whose input was also essential to the results. Recognition also goes to Mr. Gary Petker, The Honourable Mr. Justice Coulter Osborne, and Mr. George Cooke, all of whom were instrumental in getting this project off the ground. Thank you to all the staff at the two participating insurance companies in Alberta—without your willingness to participate, the study would never have been conducted. I would also like to acknowledge my family who supported me throughout this long journey. A special mention goes to: Robert Tasker, my husband and co-pilot in life (bless you for not cutting the rope); Kylie, Connor, and John Mackenzie, my three children (one of whom affectionately named this PhD our “fourth child”); and to Ms. Judy Simon, for taking special care of my children to allow me the time to collect the data and write my dissertation. A big thank you also goes to Ms. Pauline Fisk, IGP administrator for ensuring that the administrative aspects of completing this PhD were done correctly. It is important for me to recognize four

additional pillars of support: Dr. Kathryn Allan, Dr. Julia Burnier, Mr. Ben Smith, and Ms. Ellen Morris. It was through your help that my true voice and passion came through in the writing of this dissertation. I would also like to acknowledge the wonderful support of my colleagues, friends, Kensington neighbours, and my Eau Claire Running Room running partners—all of whom helped me to stay strong and keep going. Finally, I would like to acknowledge all the claimants who participated in this project and to those claimants who I have worked with throughout my career—it is because of you that I chose to pursue this PhD. Thank you to everyone for getting me across the PhD finish line!

## **Dedication**

To my children—Believe in who you are and that what you do in life is worthwhile.

## Table of Contents

Abstract .....	ii
Acknowledgements .....	iv
Dedication .....	vi
Table of Contents .....	vii
List of Tables .....	xii
CHAPTER ONE: INTRODUCTION .....	1
1.1 Overview .....	1
1.2 MVA Insurance Compensation for Claimants with Traumatic Brain Injury .....	8
1.3 The Researcher's Perspective .....	10
1.4 Conception of a Four-Phased Claims Management Process .....	16
CHAPTER TWO: LITERATURE REVIEW.....	20
2.1 Overview .....	20
2.2 Purpose of Motor Vehicle Accident Insurance Compensation.....	21
2.2.1 At-Fault MVA Insurance Compensation System.....	24
2.2.2 Purpose of a No-Fault MVA Insurance Compensation System .....	28
2.3 Analysis of Six Influential Studies on MVA Insurance Compensation Systems .....	29
2.3.1 The Columbia Study (1932) .....	30
2.3.2 Automobile Accident Cost and Payments (AACP) Report (1964) .....	32
2.3.3 Keeton & O'Connell Plan (1965).....	36
2.3.4 Osgoode Hall Study (1965) .....	37
2.3.5 The Saskatchewan Report (1973).....	39
2.3.6 The Osborne Report (1988).....	41
2.3.7 Summary of the Results of the Six MVA Studies Examined.....	44
2.4 Access to Benefits by MVA Claimants with Traumatic Brain Injuries .....	48
2.4.1 Incidence of Traumatic Brain Injury Caused by a Motor Vehicle Accident.....	48
2.4.2 Advancements Made in the Measurement of Traumatic Brain Injury .....	50
2.4.3 Treatment of Traumatic Brain Injury along a Continuum of Care.....	53
2.4.3.1 Consideration of Whiplash Associated Disorder.....	62
2.5 Summary and Conclusion .....	65
CHAPTER THREE: METHODS.....	67
3.1 Research Design .....	67
3.2 Recruitment of Insurance Companies as Data Sources .....	68
3.3 Initial Studies .....	71
3.4 Design Refinements .....	73
3.4.1 Refinement to No-Fault MVA Insurance Compensation System Type .....	73
3.4.2 Refinements to Defining Traumatic Brain Injury Severity Levels .....	75
3.4.3 Refinement to the Qualitative Data Sources .....	76
3.4.4 Refinement in Conceptualizing the Claims Management Process .....	77
3.5 Selection of Sample Population.....	78
3.6 Ethical Considerations .....	81

3.6.1 Consent of Claimants for Access to Data.....	81
3.6.2 Maintaining Anonymity and Confidentiality .....	82
3.7 Instrumentation .....	84
3.7.1 Displays .....	84
3.7.2 Dependent Variable Measurement Scales .....	86
3.7.2.1 Adversarialness Scale .....	86
3.7.2.2 Cost Scale .....	87
3.7.2.3 Responsiveness Scale .....	90
3.7.2.4 Recovery Scale .....	91
3.8 Data Sources in Claims Files .....	92
3.8.1 Documents Pertaining to Accident/Fault Investigation Phase .....	93
3.8.2 Documents Pertaining to Medical/Rehabilitation Phase .....	93
3.8.3 Documents Pertaining to Claims Administration Phase .....	94
3.8.4 Documents Pertaining to Dispute Resolution Phase .....	94
3.9 Data Collection and Organization.....	94
3.9.1 Preliminary Review of Claims Files for the Initial Studies.....	95
3.9.2 Preliminary and Comprehensive Review of Claims Files for Main Study .....	97
3.9.3 Completeness of Data Collection .....	99
3.10 Data Analysis.....	99
3.10.1 Part I: Analysis of Between Group Differences on the Main Independent Variables .....	100
3.10.2 Part II: Examining Effect of Key Factors/Players on MVA Insurance Compensation Systems .....	102
3.10.3 Part III: Examining Key Factors/Players on TBI Severity .....	103
<b>CHAPTER FOUR: RESULTS.....</b>	<b>104</b>
4.1 Part I: Analysis of Independent Variables on Dependent Measures .....	105
4.1.1 Comparison of MVA Insurance Compensation Systems .....	105
4.1.2 Comparison of TBI Severity .....	106
4.1.3 Relation of Cost to MVA System and to TBI Severity .....	108
4.2 Part II: Effect Key Factors/Players have on Adversarialness and Cost .....	112
4.2.1 Accident/Fault Investigation (AF) Phase .....	112
4.2.1.1 Identifying Key Factors/Key players in AF Phase .....	112
4.2.1.2 Influence of Key Factors/Players on Adversarialness and Cost .....	114
4.2.2 Medical/Rehabilitation (MR) Phase .....	118
4.2.2.1 Identifying Key Factors/Key Players in MR Phase .....	118
4.2.2.2 Effect of Key Factors/Players in MR phase on Adversarialness and Cost .	120
4.2.2.3 Effect of Discrepant Health Information on Adversarialness .....	123
4.2.3 Claims Administration (CA) Phase .....	127
4.2.3.1 Identifying Key Factors/Players in CA Phase .....	127
4.2.3.2 Influence of Key Factors/ Players on Adversarialness and Cost .....	130
4.2.4 Dispute Resolution (DR) Phase: Key Factors/Players .....	134
4.2.4.1 Identifying Key Factors/Players in DR Phase .....	134
4.2.4.2 Effect of Key Factors/Players in DR Phase on Adversarialness and Cost .	136
4.3 Part III: TBI severity as a Consideration .....	138

4.3.1 Identifying Key Factors/Players .....	138
4.3.1.1 Effect of Key Factors/Players by TBI Severity, Cost and Recovery .....	143
4.3.2 Additional Analyses of Factors Influencing Cost by TBI Severity.....	148
4.4 Part IV: Summary of Results .....	152
<b>CHAPTER FIVE: DISCUSSION .....</b>	<b>157</b>
5.1 Introduction.....	157
5.2 Context of Findings .....	157
5.3 Differences Between MVA Systems on Adversarialness.....	159
5.3.1 Discrepant Health Information in Claims Files.....	160
5.3.1.1 Discrepant Health Information in No-Fault System .....	161
5.3.1.2 Discrepant Health Information in At-Fault System .....	162
5.3.2 Contributory Negligence /Cause-in-fact of Claimed Injuries .....	166
5.3.3 Limiting an Insurance Company's Liability .....	168
5.3.4 Claimant's Relationship to the Insured Driver.....	171
5.4 Difference Between MVA Insurance Compensation Systems on Cost.....	175
5.4.1 Higher Cost to Settle Issues in Dispute .....	177
5.5 TBI as a Consideration Pertaining to Cost.....	178
5.5.1 Kinds of Medical/Rehabilitation Evidence to Support a TBI Claim.....	178
5.5.2 Claimant's Right to Access Remedies of His or Her Choice .....	181
5.5.3 Inequity and Moral Hazard.....	184
5.6 Summary and Conclusion of the Discussion .....	189
5.7 Limitations of the Study and Prospects for Further Research .....	193
5.8 Implications and Recommendations for Key Stakeholders .....	198
5.8.1 The Insurance System.....	198
5.8.2 Implications and Recommendations for Health Care System .....	200
5.8.3 Implications and Recommendations for Judicial System.....	202
5.8.4 Implications and Recommendations for Government .....	203
5.8.5 Implications and Recommendations for Claimants.....	204
<b>APPENDIX A: ANALYSIS OF SIX INFLUENTIAL NORTH AMERICAN STUDIES ON MVA INSURANCE COMPENSATION SYSTEMS.....</b>	<b>209</b>
A.1. Columbia Study (1932).....	209
A.2. (AAPC) Report (1964).....	210
A.3. Keeton & O'Connell Plan (1965) .....	212
A.4. Osgood Hall Study (1965) .....	213
A.5. Saskatchewan Study (1973).....	214
A.6. Osborne Report (1988) .....	216
<b>APPENDIX B: APPENDICES FOR METHODS CHAPTER.....</b>	<b>218</b>
B.1. Sample of Letter of Introduction to Insurance Companies .....	218
B.2. Sample of Confidentiality Agreement .....	219
B.3. Sample of Letter to Claimants Requesting Participation .....	219
B.4. Sample of Displays Used for Data Gathering From Claims Files .....	221
B.4.1. Sample of Accident Benefits Type and Cost Display.....	221

B.4.2. Sample of At-Fault Claimant Insurance Information Display .....	222
B.4.3. Sample of Claimant Demographics Display .....	223
B.4.4. Sample of Claims Management by Continuum of Care Display.....	224
B.4.5. Sample of Document Type Display .....	225
B.4.6. Sample of File Inquiry Display.....	226
B.4.7. Sample of Follow-Up Log Display .....	227
B.4.8. Sample of General Inquiry Display .....	228
B.4.9. Sample of Insurance File Code Display .....	229
B.4.10. Sample of Potential Key Factors Display .....	230
B.4.11. Sample of Settlement Cost Display .....	231
B.5. Establishing Inter-Rater Reliability for the Scales: Introduction and Overview .....	231
B.6. Establishing Inter-Rater Reliability for Adversarialness Scale.....	236
B.6.1. Cohen's Kappa Coefficient and Kendall Rank Correlation Coefficient for Adversarialness .....	237
B.6.2. Criteria Used to Score Adversarialness .....	238
B.6.3. Sample of Instructions for Scoring Adversarialness.....	240
B.7. Establishing Inter-Rater Reliability for Responsiveness.....	240
B.7.1. Percentage Agreement for Responsiveness Scoring .....	241
B.7.2. Sample of Responsiveness Scale Score Sheet .....	241
B.7.3. Excerpt of Scoring Responsiveness .....	243
B.8. Documents Contained in Claims Files .....	243
B.8.1. Documents for Accident/Fault Investigation Phase.....	243
B.8.2. Documents for Medical/Rehabilitation Phase .....	244
B.8.3. Documents for Claims Administration (Section B; No-Fault) Phase.....	245
B.8.4. Documents for Claims Administration (Section A; At-Fault) Phase .....	245
B.8.5. Documents for Dispute Resolution Phase .....	246
B.9. Claimant Demographics by Claim Type and Injury Severity .....	247
B.9.1. Gender by Claim Type.....	247
B.9.2. Gender by Injury Severity.....	248
B.9.3. Average Age by Claim Type .....	248
B.9.4. Average Age by Injury Severity .....	248
B.9.5. Educational Level by Claim Type .....	248
B.9.6. Educational Level by Injury Severity .....	249
B.9.7. Average Income by Claim Type .....	249
B.9.8. Average Income by Injury Severity.....	249
B.10. Observed Scores for the Dependent Variables.....	249
B.10.1. Observed Scores for Adversarialness .....	249
B.10.2. Observed Scores for Cost .....	250
B.10.3. Observed Scores for Responsiveness .....	250
B.10.4. Observed Scores for Recovery .....	250
 APPENDIX C: ENTER METHOD REGRESSION ANALYSIS.....	251
C.1. Enter Method Regression Results for AF Phase .....	251
C.1.1. Set of Tables 4-5b: Key Players and Adversarialness in AF Phase.....	251
C.1.2. Set of Tables 4-5c:Key Players and Cost in AF Phase .....	251

C.2. Enter Method Regression Results for CA Phase.....	252
C.2.1. Set of Tables 4-12a: Key Players and Adversarialness in CA Phase .....	252
C.2.2. Set of Tables 4-12b: Key Players and Cost in CA Phase .....	253
C.3. Enter Method Regression Result for TBI as a Consideration .....	253
C.3.1. Set of Tables 4-16a: Type of Care and Cost .....	253
C.3.2. Set of Tables 4-16b: Primary Diagnosis and Cost.....	254
C.3.3. Set of Tables 4-17a: Type of Care and Recovery.....	255
C.3.4. Set of Tables 4-17b: Primary Diagnosis and Recovery .....	256

## **List of Tables**

Table 3-1 Claims Files by Insurance Provider.....	79
Table 3-2 Research ID Number Format.....	82
Table 3-3 Modifications to Displays for Main Study .....	85
Table 3-4 Sample Populations by TBI Severity and Claim Type.....	101
Table 4-1 Comparison of MVA Insurance Compensation Systems on Dependent Measures ...	105
Table 4-2 Comparison of TBI Severity on Dependent Measures .....	106
Set of Tables 4-3a Contribution of Injury Severity Relative to MVA Systems on Cost .....	108
Table 4-3b Cost Difference between MVA Systems Based on TBI Severity .....	109
Table 4-3c Cost Difference between MVA Systems Based on TBI Severity .....	110
Table 4-3d Cost Difference in No-Fault System Based on Liability and TBI Severity .....	111
Table 4-4 Key Factors/Players by MVA Insurance Compensation Systems .....	113
Set of Tables 4-5a Key Factors in AF Phase on Adversarialness.....	115
Set of Tables 4-5b Key Players in AF Phase on Adversarialness.....	116
Set of Tables 4-5c Key Players in AF Investigation Phase on Cost .....	117
Table 4-6 Key Factors/Players by MVA Insurance Compensation Systems .....	118
Table 4-7 Key Factors/Players in MR Phase on Adversarialness and Cost .....	120
Table 4-8 Changes to TBI Severity as Illustrated in Report Excerpts .....	124
Table 4-9 Changes to TBI Severity as Illustrated in Report Excerpts .....	125
Table 4-10 Key Factors/Players by MVA Insurance Compensation Systems .....	127
Table 4-11 Key Factors/Players in CA Phase on Adversarialness and Cost .....	130
Set of Tables 4-12a Key Players in CA Phase on Adversarialness .....	132
Set of Tables 4-12b Key Players in CA Phase on Cost .....	133

Table 4-13 Key Factors/Players by MVA Insurance Compensation Systems .....	134
Table 4-14 Key Factors/Players by TBI Severity .....	139
Table 4-15 Neurologists in Community-based Care by TBI Injury Severity .....	143
Set of Tables 4-16a Type of Care and Cost .....	143
Set of Tables 4-16b Primary Diagnosis and Cost .....	144
Set of Tables 4-17a Type of Care and Recovery .....	146
Set of Tables 4-17b Primary Diagnosis and Recovery .....	148
Table 4-18 Key Factors by TBI Severity .....	149
Table 4-19 Average Settlement Cost for At-Fault Claims by TBI Severity .....	150
Table 4-20 Average Bill of Cost for Plaintiff Lawyer by TBI Severity .....	151

## **Chapter One: Introduction**

### **1.1 Overview**

This thesis examines how the design of a motor vehicle accident (MVA) insurance compensation system affects access to benefits for claimants who have sustained a traumatic brain injury in a motor vehicle accident. A particular focus of this research is on how various factors at the systems level affect such access and, in turn, how this affects recovery for the individual claimants. How best to compensate an individual who has sustained injury following a motor vehicle accident (MVA) is a topic that has been well debated for the past 80 years. As noted by Kleffner and Nielson (2004), “attempts to decide what type of system is best for compensating those injured in auto accidents and who will pay the cost of those damages has remained unresolved for decades” (p. 91). At the core of this debate is the financial and emotional hardship suffered by families who do not receive adequate compensation when one of their family members is killed or injured from a motor vehicle accident.

The first study of note to identify adequacy of compensation as an issue was by the “Committee to Study Compensation for Automobile Accidents.” The Report was presented to the Columbia University Council for Research in the Social Sciences in 1932. The Columbia Study, as it is called, investigated thousands of actual cases (both rural and urban). The findings were that: (1) despite high awards, the common law system did not fully compensate accident victims for actual loss (an inadequacy especially pronounced where loss was greatest in serious and fatal injury cases); and, (2) no significant payments were made where the driver was financially irresponsible (by not having adequate personal finances or insurance coverage). This study also found such losses to be associated with poverty and other social factors.

The type of MVA insurance compensation available at the time the Columbia Study was

conducted has come to be known as at-fault. Still prevalent today, at-fault MVA insurance compensation has, at its core, the value that holds an insured driver accountable for compensating any losses incurred by a claimant if those losses resulted from the insured driver's carelessness. A main conclusion of the Columbia Study was that because of the aforementioned problems cited (and others), an alternative to the at-fault insurance approach was needed. The study suggested creating a system that would distribute payments more promptly and more equitably, and would provide a reasonable amount of benefits through periodic accident benefit payments (from the outset of the claim and as long as needed). The Columbia Study proposed a compensation scheme for automobile accidents similar to that of workers compensation systems legislated by state and federal governments.

This proposal, however, saw little success. There was one exception, as Fleming (1959) observed, more than twenty five years later in a paper that examined reasons why the Columbia Study failed to have a greater impact: "in spite of the grave defects of our present system as a method of compensating accident victims, only one jurisdiction in the Anglo-American world, the province of Saskatchewan, Canada, has adopted a system of compensation in any field besides that of industrial accidents" (p. 410). Saskatchewan had fundamentally established the beginnings of the first no-fault MVA insurance compensation system in 1946, later formalized by adoption of The Automobile Accident Insurance Act in 1958.

Subsequent studies in the 1960s came to essentially the same conclusion. These studies included the Automobile Accident and Cost Payment (AACP) Report by Conrad, Morgan, Pratt Jr., Voltz, and Bombaugh (1964), which examined Michigan's at-fault system and reviewed a few European no-fault models as templates for a suitable no-fault system that could be implemented in the USA; the Keeton and O'Connell (1965) Basic Insurance Protection Plan,

which developed a basic blueprint of a no-fault system which could replace an at-fault system; and the Osgoode Hall Study by Linden (1965), which examined the at-fault system in Ontario. The main conclusions drawn in these studies were that severe injury from a motor vehicle accident takes its toll on both the individual and his or her family members—physically, cognitively, emotionally and financially—and that the at-fault system was inadequate in addressing these needs. The authors were of the view that there was a need to implement some kind of alternative system, by either fully replacing the at-fault system with a pure no-fault system, or modifying the existing system to include provisioning for no-fault accident benefits, to ensure that all claimants, regardless of fault, would have access to health care services. Such modifications would help to offset the financial and emotional hardship experienced by families, and promote better recovery, primarily because a no-fault system would focus on rehabilitation instead of retribution. These studies, and two subsequent ones by Snider, James, and Adams (1973), which was an examination of Saskatchewan's system, and by Osborne (1988), who examined the Ontario system, influenced the three types of MVA insurance compensation systems we now have in Canada.

First, as already mentioned, there is the traditional at-fault system. This type of system is intended to make the individual, who caused injury to another through their careless actions, pay in full for the injuries caused. The individual who has caused injury is referred to as the “at-fault party.” The individual who has been injured is referred to as the “claimant.” For a claimant to be compensated in full for his or her losses, he or she must sue the at-fault party. If it can be proved that the at-fault party carelessly caused injury, the loss incurred by the claimant, and its associated costs, is transferred to the at-fault party.

An at-fault MVA system, however, also typically has a modicum of no-fault accident benefits that a claimant can access immediately without having to sue the at-fault party. This no-fault portion of an at-fault system has a pre-determined and finite limit to amounts available to pay for expenses (such as rehabilitation and medical services) that would not otherwise be paid for by other means. It provides for a suitable amount of immediate compensation, regardless of having to prove that the accident was caused by the fault of another. This amount is intended to address the needs of all but the seriously injured. Because the majority of injuries incurred in a motor vehicle accident are minor, and therefore do not require an extensive amount of money to pay for medical and rehabilitation services, a sizable portion of claimants injured in motor vehicle accidents have no need to sue the at-fault party. As such, one of the intended purposes of an at-fault system is to compensate only those claimants who have been seriously injured and require more in the way of medical and rehabilitation services (sometimes life-long).

With this being said, there are some seriously injured claimants who are not well-served by an at-fault system. First, there are those who cannot prove that the at-fault party was liable. A law suit in such circumstances is not likely to provide compensation. Second, there is a group of seriously injured claimants who are liable for the accident and therefore cannot sue. In these circumstances, claimants are left without full compensation. Given these conditions, and as cited by several of the leading researchers, such as the Committee to Study Compensation for Automobile Accidents (1932), Conrad et al. (1964), and Linden (1965), an unintended consequence of the design of an at-fault system is that a large majority (between 70% to 90%) of claimants who have sustained severe injury are not fully compensated. Additionally, while some no-fault benefits are available in an at-fault system, there are no laws that either require any claimant to access benefits from the no-fault portion of an at-fault system or prevent any

claimant who has sustained injury, even the most minor of injury, from suing an at-fault party (with the exception of those claimants who are liable for the accident). Another unintended consequence of the design of an at-fault system, then, is that claimants who have sustained minor injuries can be over compensated by suing the at-fault party, as identified by Osborne (1988), compared to claimants who have sustained severe injury (defined as “serious”) and who tend to be undercompensated. Thus, due to the chance of claimants with serious injury being undercompensated, combined with the chance of claimants with minor injury being overcompensated, an at-fault system is regarded as an ill-suited means of providing equitable compensation benefits for a large majority of those who are claiming. A number of provinces, including Alberta and the Maritimes, have an at-fault system in place.

A second type of MVA insurance compensation system, referred to as “pure no-fault,” has at its core the value of fairness. Specifically, accident benefits in this type of system are available to the majority of those injured, regardless of fault, and are not limited to a pre-determined and finite monetary limit (as is provided in the no-fault portion of an at-fault system). A pure no-fault system focuses on rehabilitation, not litigation, by providing those injured in an MVA with immediate access to an ample amount of health care benefits for as long as these are needed. In order to ensure that those who are injured are compensated, and to do so without high insurance premiums costs, claimants are not compensated in full for their loss. In practice this means they typically cannot sue for pain and suffering (an amount of money deemed to pay for the “psychic” loss caused by the accident). Instead, claimants are only provided with a partial amount of coverage to pay for incurred or pecuniary losses<sup>1</sup> such as health care services.

---

<sup>1</sup> Pecuniary losses are losses that can be quantified.

Payment for pecuniary losses is intended to prevent financial hardship for claimants, especially while they are recovering and cannot earn an income.

A trade-off in this type of system is that the right of the claimant to sue the at-fault party has been eliminated. For some, this goes against a well-established value in a society that is governed by common law—that the wrongdoer ought to be punished for his careless action. Therefore, eliminating the right of a claimant to sue the at-fault party is seen by some as akin to granting the wrongdoer immunity from having to pay for his careless actions. A corollary argument is that it also discourages good driving behaviour, as drivers do not have to fear that their careless driving will result in the punishment of being held liable if they were to cause injury to another. It is important to note that evidence to support these arguments has not been well established. Provinces like Quebec, Manitoba, and Saskatchewan, have adopted variations of this model.<sup>2</sup>

A third type of system seeks to blend together the strengths inherent in both an at-fault and no-fault system—referred to as a threshold no-fault system—so that the value of the right to sue an at-fault driver (who has caused harm) still remains intact, and the value of access to immediate health care to meet the needs of even the most seriously injured, regardless of fault, is also made available. The purpose of this type of system is still intended to serve only those claimants who are truly injured. Therefore, there is a “threshold” that a claimant must overcome before he or she can file a law suit against the at-fault party, and which is intended to eliminate all but the seriously injured from being able to bring a law suit to bear.

---

<sup>2</sup> Saskatchewan’s MVA insurance compensation system is referred to as a choice at-fault/no-fault plan, in that an insured driver can elect to be part of either a no-fault system or an at-fault system.

In this third system, there are two types of thresholds: a verbal one and a monetary one.

A verbal threshold means that a claimant must sustain a degree of injury that is verbally defined as permanent and serious. A monetary threshold means that a claimant must have accessed a sufficient dollar amount of accident benefits in the no-fault portion of this type of system (as defined by the regulations), before he or she can bring a law suit to bear on the at-fault party. Both types of thresholds are essentially controlled by specific health care professionals, as outlined in the regulations, who either provide an opinion as to the permanence and seriousness of an injury or who sign treatment plans outlining the type and amount of accident benefits coverage a claimant needs. The intended purpose of a threshold is to help control high costs incurred by paying overvalued amounts for the minor injury claims. An unintended consequence, however, is that some health care professionals—seen as hired guns by a claimant’s lawyer—will provide an opinion or sign a treatment plan for claimants, who either have not sustained serious injury or who do not require the type or amount of health care benefits being proposed, in order to overcome the threshold. This creates an avenue for minor claims to proceed to court (via an at-fault claim) that would not otherwise have been available if not for the opinion of the plaintiff-hired health care professional. To date, in Canada, a threshold no-fault system is found only in the province of Ontario.

While the different types of MVA insurance compensation systems have been extensively examined throughout the years, followed by changes to some, none of the three types of approaches to an MVA system has resulted in an ideal design that promotes the intended outcomes and fully diminishes the unintended ones. It is interesting to note that most studies have focused on examining a single type of system than providing a comparison of the different designs. This study, which compares differences between an at-fault system and a no-fault

system as they pertain to access to health care benefits for claimants who have sustained injury from an MVA, is therefore an innovative and necessary contribution to this discussion. Its combined focus that considers the four outcome variables of “adversarialness,” “cost,” “responsiveness” and claimant’s “recovery” is also unique. Most existing studies give particular attention to “cost” and, while though many mention “adversarialness,” this aspect does not seem to have been examined in much depth. Few papers, if any, have given attention to how “responsive” the MVA system was for those involved, and to the “recovery” of those injured. Therefore, one of the major aims of this study is to comprehensively examine all four kinds of outcome.

## **1.2 MVA Insurance Compensation for Claimants with Traumatic Brain Injury**

A further difference from prior studies is that this thesis pays attention to MVA insurance claimants sustaining traumatic brain injury (TBI). The interest amongst key stakeholders in creating a MVA insurance compensation system is that all claimants, regardless of fault, should have access to health care benefits and that access is especially important to those claimants who have sustained serious injury. One of the most serious of injuries caused by an MVA is a traumatic brain injury (TBI) (CIHI, 2006). According to Testa, Malec, Moessner, and Brown (2006), “traumatic brain injury (TBI) in adulthood results in myriad of symptoms, many of which are chronic and disruptive, both for patients and for their family” (p. 236).

Some attention has been given to examining TBI in relation to MVA insurance compensation using such factors as accuracy of diagnosis, assessment, and treatment; as well as considering the ways these factors bear on the successful reintegration of the claimant into the community. One example is a study by Cassidy, Carroll, and Cote (2004) on the incidence and length of time it took to close a claim for a group of mild TBI claimants who had sustained their

injury from a motor vehicle accident and were claiming in either a tort-based or no-fault-based MVA insurance compensation scheme. Generally, the conclusions drawn were that claimants in the tort system had a longer time to claims closure, due to both insurance and injury-related factors, compared to those who were claiming in the no-fault system. Another example is the research conducted by Reynolds, Paniak, Toller-Lobe, and Nagy (2003) that examined a cohort of claimants with mild TBI seeking compensation from various funding sources in order to assess financial seeking behaviour and length of time to return to work. The general conclusions drawn were that claimants who were in litigation continued to seek financial compensation longer and also took more time to return to work in comparison to claimants who were not seeking financial compensation through a litigation process (such as through Workers' Compensation).

It appears that no research has yet compared differences between claimants with mild TBI to claimants with moderate/severe TBI, focusing on their experience in accessing benefits in an MVA insurance compensation system. This project's type of comparative analysis, then, holds the promise of providing data for both TBI consumer groups concerned about accessing needed health care and other benefits, as well as data for MVA insurance compensation systems that currently use TBI severity as a criterion to determine access to the type and amount of damages or accident benefits provided in an MVA claim. For example, in Alberta, pain and suffering is now limited to a maximum of \$4,000 for those who sustain minor injury. In Ontario, the degree of TBI severity determines whether an insurance adjuster is obligated to pay for case management. From my experience as a consultant to claimants who have sustained TBI, such eligibility criteria have an impact on how adversarial a claim becomes, the amount of funding an

insurance adjuster provides, and the timing of when a claimant receives this funding—all important factors that may have an impact on a claimant’s recovery.

### **1.3 The Researcher’s Perspective**

My interest in examining the experience of TBI claimants in at-fault and no-fault MVA insurance compensation systems on measures of adversarialness, cost, responsiveness and recovery stems from the experience I have gained as a clinician and rehabilitation consultant within both types of systems. I began my clinical practice as a Kinesiologist and Certified Athletic Therapist in the mid-1980s providing therapy to professional and amateur athletes, and to claimants from Ontario’s Workplace Safety and Insurance Board (WSIB). I was struck by how motivated and engaged the professional/amateur athletes were in their therapy (based on the effort they placed upon their recovery, as indicated by how hard they worked in clinic and in completing their follow-up home exercise routines) and how their efforts then resulted in an early return to pre-accident function. This observation was in contrast to the WSIB claimants, who, in general, showed less interest and motivation to participate in the therapeutic process. In turn, this group on average took longer to get back to work.

Shortly thereafter, I began working as a rehabilitation consultant, providing services to claimants who sustained neurotrauma from a motor vehicle accident (which happened to be shortly after Ontario had implemented its threshold-no fault MVA insurance system). This job involved coordinating claimant care through a case management process, and preparing long term needs and cost analysis. Specifically, I was struck by the difficulties I encountered in accessing funding from an MVA insurance provider on behalf of claimants who sustained brain injury (especially those with mild TBI). For example, I noticed that Independent Medical Examinations (IMEs) requested by insurance adjusters typically concluded that most claimants

with mild TBI did not require ongoing treatment. This resulted in denying all but the most seriously injured claimants access to accident benefits coverage, and added long delays in access to benefits for those claimants with mild TBI while the matter was being disputed.

In 2000, I began my graduate work in Community Rehabilitation and Disability Studies at the University of Calgary. My exit study focused on changes being made to Ontario's system at that time, with a specific interest in how the insurance industry was using IMEs as a gate-keeping mechanism to reduce accident benefits costs. Further, I identified an apparent lack of research specifically examining measures of cost, adversarialness, and responsiveness in relation to their effect on recovery from a TBI caused by an MVA. These omissions seemed important to redress. Early in the new millennium, I extended rehabilitation consulting services to Manitoba, which has a pure no-fault MVA insurance compensation system. From my perspective, while Manitoba's no-fault system was more focused on ensuring that claimants had access to immediate services, the quicker access to accident benefits for claimants recovering from a TBI did not necessarily result in claimants getting back to work sooner. The knowledge gained through my work-related experiences and my Master's level graduate studies have helped to guide this study.

Of additional relevance in my perspective on this topic was the birth of my second child, which happened within a few short years of starting my career as a rehabilitation consultant. My son was born with Down syndrome and later developed autism—two disorders that have led to a severe degree of disability for him. In this manner, I and my family have essentially became consumers of compensation offered through government funded programs for individuals with severe disabilities. So, not only did I return to graduate school with a goal to become a better advocate for the claimants with whom I worked, a second, albeit similar goal, was to become a

better advocate for my son in gaining access to funding through government-funded compensation systems. This personal experience has both inspired and guided this study.

My perspective on access to benefits through a compensation system is further informed by my experience as a Case Manager of claimants seeking access to MVA insurance compensation benefits. The prime observation I have made in this regard is that claimants (and those who advocate on behalf of claimants) are both goal-oriented and rational decision makers. In large part, their decision to access benefits (or not to access benefits) is based on a claimant's perception that: first, a given benefit will improve their circumstances; and second, that the anticipated improvement outweighs the time it takes them to complete the administrative work in order to access the benefits. There is, however, a third and crucial aspect of accessing benefits via a compensation system: most compensation systems require "proof" of need. This typically involves a physician (or otherwise qualified health care professional) who prepares a medical certificate to authenticate a claimant's request for compensation, and to approve treatment plans to access the specific benefits. In this manner, a physician is acting as an agent for a claimant. Thus, from my experience, in addition to a claimant making a rationale decision to apply for benefits, a claimant must establish an agency relationship with one or several physicians (or otherwise qualified health care professionals), depending on the nature of the impairment, in order to successfully access these benefits from a compensation system.

For some claimants, then, it can be difficult to establish effective agency relationships of this nature, due in large part to a claimant's inability to pay for this type of service (as funding for this type of service is typically not reimbursed by a publicly funded health care system). In these cases, a physician must then agree to participate without a guarantee that they will be reimbursed for their service. This view is based on my own experience of meeting with

claimants' physicians in order to get them to approve treatment plans. It was during these meetings that physicians shared their frustrations of having to put in a substantial amount of additional time to address claimants' needs without a guarantee of a positive return on their investment (for either the claimant or themselves). This challenge was also shown to be a major factor in access to health care benefit from claimants based on the research conducted by Osborne (1988).

Similarly, insurers in charge of managing compensation claims also align with physicians, but this agency alignment serves as a means of restricting access to compensation benefits because physicians will typically provide an opinion that a claimant has not sustained an injury that requires compensation. Effective agency relationships between insurers and physicians seem easy to establish because insurance companies typically can afford to pay their agents (and in a timely manner). Further, it is not uncommon that physicians who work directly with insurance companies conduct such assessments on more-or-less a full-time basis, and therefore view this type of work as a main job. This contrasts with family physicians who see their full time job as treating patients, and where preparing a medical certificate forms only a small part of their everyday medical practice. As opposed to those physicians specifically hired by insurers, family physicians of claimants receive a lower level of pay (and with a lack of timeliness). This results in a situation where few physicians are willing to act on behalf of claimants and more physicians are willing to act on behalf of insurers, creating a power imbalance between a claimant who cannot establish effective agency relationships and an insurance adjuster who can.

The power of a social system is defined by Baumgartner (1978) as, "the ability of actors to bring about or influence social actions and outcomes favourable to their interests *within* an

institutionalized social action context” (p. 41). From my professional experience, it seems that when an insurance adjuster denies a claim for a benefit, most claimants do not have enough power to change this decision when acting on their own. A claimant thus tends to seek out assistance of a plaintiff lawyer, a person who has both knowledge and capital to hire physicians as agents for the claimant, in an effort to balance the power between a claimant and an insurance adjuster. When this happens, a claimant has a better chance of having their claim for a benefit approved.

Interestingly, when Ontario’s MVA insurance compensation system changed from an at-fault system to a threshold no-fault system, it was anticipated that this would eliminate the need for a claimant to hire a plaintiff lawyer to help them access health care benefits. It was initially thought that a no-fault system would be less adversarial since benefits would be provided by the claimant’s own insurance company (as opposed to an at-fault system in which the majority of benefits are paid for by another person’s insurance company). However the opposite effect happened—the number of claimants who were represented by a plaintiff lawyer increased. This was because insurance adjusters were denying no-fault accident benefits to most claimants. Furthermore, no matter how many changes were implemented over the years to improve ease of access to health care benefits for claimants in Ontario’s system, the balance of power, as it pertained to settling a claim via negotiations between an insurance adjuster and claimant, remained in the hands of the insurance adjusters and many claimants continued to be denied access to benefits. This meant that more claims came to be arbitrated as a means of resolving disputes and more physicians (as agents) participated in this type of system to provide an opinion as to a claimant’s degree of impairment and need of benefits (for both the insurance adjusters and claimants) in order to settle claims. The practices saw rehabilitation costs steadily increased over

time and, in turn, Ontario's threshold no-fault MVA insurance compensation system was becoming less responsiveness to the needs of the majority of claimants. What I observed was that in addition to a claimant's recovery being dependent upon the initial degree of impairment, their recovery was also affected by how well their claim was being managed (with the outcome being that claimants who were denied access to benefit were experiencing more stress than claimants who were not being denied access to benefits).

Having experienced first-hand that a no-fault accidents benefits insurance compensation system did not necessarily lead to less adversarialness, less cost, better responsiveness, and better recovery (as compared to an at-fault system), I became interested in conducting research that compared a no-fault and an at-fault MVA insurance compensation system based on these measures for claimants who were accessing health care benefits as a result of sustaining a traumatic brain injury from an MVA. Having directly observed that legislative changes to the design of an MVA insurance compensation system alone were not effective in generally benefiting the claimant, I became interested in understanding how certain key factors—and the relationships between the primary players who get involved to address these factors—were contributing to such measures as the degree of adversarialness, cost, responsiveness, and recovery, as a means of helping to explain the differences between an at-fault and no-fault MVA insurance compensation system for claimants.

Given the complex nature of a motor vehicle accident compensation system, and the many key factors and players involved in the claims management process, it was necessary to develop a conceptual framework that would allow me to separate the complex into smaller units or bits so they could be analyzed. In this regard, I found the concepts of General System Theory (GST) to be helpful in developing a framework. Bertalanffy (1968) describes GST as a general

science of “wholeness” used to explain complex systems not understandable by investigation of their respective parts in isolation (p. 37).

Following this principle, I separated out the parts of an MVA insurance claims management process into smaller units so that the key factors and key players could be better understood, yet remains integrated and explained as a whole. Specifically, I conceptualized a four-phased MVA insurance claims management process, occurring in overlapping but sequential phases, each of which may involve different key factors thought to influence the manner in which a claim is processed, and the key players who participate to address these factors in order to achieve specific outcomes in keeping with their interests. I will next briefly describe each phase.

#### **1.4 Conception of a Four-Phased Claims Management Process**

The process of managing a bodily injury claim, from immediately after an accident through to its final resolution of a payout or settlement, in a MVA insurance compensation system is complex. Based on my experience, a claims management process involves all or several of the following phases:

- Accident/fault investigation phase (AF phase)
- Medical/rehabilitation phase (MR phase);
- Claims administration phase (CA phase); and
- Dispute resolution phase (DR phase).

During the AF phase, various players are mobilized to investigate and evaluate the: (1) occurrence of a motor vehicle accident and related bodily injury; (2) factors that contributed to the accident (cause); (3) degree of fault of the insured driver; (4) whether an insured driver had valid MVA insurance coverage; and (5) degree of contributory negligence of the claimant (or

other entities thought to have caused the accident). The main purposes of the AF phase is for an insurance adjuster to understand the extent of their insured's degree of liability in a third-party (or at-fault) claim, and to determine that the injuries were a result of the MVA in question (as opposed to other material factors).

Immediately following an accident, if required, claimants receive a myriad of health care services along a continuum care. The full continuum of care begins with emergency services provided at the scene of the MVA, followed by hospital-based inpatient assessment and treatment (which may involve both intensive care and rehabilitation), and then, once discharged, community-based rehabilitation may be sought. The purpose of the MR phase of the claims management process is to return a claimant to his or her pre-accident activities of daily living, whether that be to return to work, school, homemaking, and so on. This is achieved by developing an understanding of a claimant's pre-accident and post-accident function following the injury(s) sustained in the MVA including any impairment, disability or handicap resulting from the injury(s). The essential factors that health care professionals need to keep in mind when assessing a claimant include: (1) the type and severity of the injury sustained using standard measures of assessment; (2) the materially contributing health factors (both pre and post-accident) that have caused the injuries (and its severity); and (3) the type and amount of long-term needs that will be required, given the severity of the injury. When all of these aspects are taken into consideration, there tends to be less discrepant health information amongst the health care professionals assessing the claimant.

The objectives pursued during the CA phase differs somewhat between at-fault and no-fault MVA compensation systems. In the at-fault system, the purpose is to settle a claim for damages in a manner that compensates a claimant for all economic loss (past and future) and for

the pain and suffering caused by that accident. Throughout the CA phase, an insurance adjuster is requesting relevant and timely information from the key players within both the accident/fault investigation and the medical/rehabilitation phases (if a claim so warrants) in order to value a claimant's loss as accurately as possible. The goal is to settle a claim through negotiations between the at-fault insurance adjuster and the claimant, and ideally within the insured driver's insurance policy limit (which for most insured drivers is a million dollars of bodily injury coverage). In the no-fault system, the purpose is to provide a basic amount of funding, using a pre-determined schedule of benefits, to cover a claimant's immediate income loss while he or she is recovering and to pay for reasonable and necessary medical and rehabilitation services that are needed beyond what other insurance compensation systems (such as the provincial health care system or an individual's private health care insurance) can provide. The amount of accident benefits coverage most no-fault systems can provide is typically limited to a maximum dollar amount and to a finite period of time, regardless of fault. A no-fault insurance adjuster also requires relevant and timely information from key players within the AF and MR phases to understand the degree of their responsibility to fund for accident benefits coverage, and if "yes," to determine when a claimant no longer requires this funding.

The DR phase applies only to those instances where claimants and insurance adjusters cannot negotiate a settlement during the CA phase (or when there is a dispute as to liability). The purpose of a DR phase is to resolve disputes between an insurer and a claimant using judicial procedures. These judicial procedures may include a civil trial, or arbitration (where court documents are formally prepared and submitted, depositions are made, and a judgement is rendered), or a quasi-judicial process such as mediation. The goal of the DR phase is to continue negotiations between an insurance adjuster and claimant so that a settlement can be reached

without having to actually engage in a court proceeding. In some instances, of course, a given case is decided by a trial judge following a court proceeding.

While the four phases of a claims management process—accident/fault investigation, medical/rehabilitation, claims management, and dispute resolution—are not new, what is innovative in this study is the idea of examining separately the key factors within each of these phases, along with the key players who participate to address these factors, on the measures of adversarialness, cost, responsiveness, and recovery. In doing so, this thesis will provide a better understanding of the complex nature of claiming in an MVA insurance compensation system.

In general, this research sets out to answer three main questions:

1. Is there a difference between at-fault and no-fault MVA insurance compensation systems in claimants' access to health care benefits, on measures of adversarialness, cost, responsiveness, and recovery?
2. Is there a difference between MVA claimants with mild as contrasted with moderate to severe degrees of TBI on overall MVA system measures of adversarialness, cost, responsiveness, and recovery?
3. What are the significant key factors that help explain such differences as found in the answers to the first two questions, and who are the significant key players who participate in the claims management process to address these key factors?

The study is exploratory in nature and uses a mixed method approach to examine quantitative and qualitative data from both at-fault and no-fault claims files (for individuals claiming TBI from private passenger motor vehicle accidents) provided by two participating MVA insurance companies in Alberta, Canada.

## **Chapter Two: Literature Review**

### **2.1 Overview**

The following literature review contains three sections, each of which contributes to the understanding of how bodily injury is compensated following a motor vehicle accident (MVA). The first section provides an overview of the two most predominant MVA insurance compensation systems that exist in Canada today—an at-fault system and a no-fault system. In this section, I will describe the general purpose of each system, their essential features, how the two systems compensate bodily injury loss, and how they address the rights and remedies of claimants seeking bodily injury compensation.

Section two provides an analysis of six studies that have been important to the development of the MVA insurance systems as they now exist in Canada. This includes a review of the fundamental challenges inherent in an at-fault system, and arguments in favour of no-fault insurance and/or blended approaches pertaining to compensation of bodily injury, as per the findings of these six studies.

The third section focuses on a specific type of MVA claimant—one who has sustained a traumatic brain injury (TBI) during the course of an MVA. This section briefly reviews literature that speaks to the incidence of TBI caused by an MVA, how TBI severity is measured and treated, and the challenges inherent in accurately assessing the degree of TBI for individuals who are claiming from a compensation system. The Literature review chapter concludes with a rationale for conducting the current study.

## **2.2 Purpose of Motor Vehicle Accident Insurance Compensation**

When an individual is seriously injured in a motor vehicle accident (MVA) and he or she cannot return to work, then financial and emotional hardship for that individual and his or her family can ensue. In these cases, access to income replacement benefits is essential to help offset the hardship experienced during the recovery period. Equally important to an injured person is the ability to access funding for the medical and rehabilitation services they require to promote the best recovery possible (with the goal of returning to his or her pre-accident employment). Also, if the degree of injury sustained is such that he or she cannot return to work, then long-term benefits are needed—sometimes for life. For example, McClusky (2000) investigated the role of paid attendant care providers in the lives of those who had acquired a TBI. It was noted that paid attendant care providers could spend upwards of 40 hours per week assisting people with a brain injury (p. 945). As well, McClusky identified five major roles for attendant care providers who provided direct care to those who sustained a TBI: attendant, protector, friend, coach and negotiator.

Just as MVA insurance compensation protects the needs of those who are injured in an MVA, it also protects the financial assets of the insured driver who is at-fault for the accident. It does so through the concept of pooling risk,<sup>3</sup> which essentially internalizes and spreads the risk amongst the larger pool of insured drivers so that the cost of repairing or replacing a loss in full is borne by the insurance company and not by the one insured. In effect, each of the insured drivers in the pool is required to pay a predetermined amount, referred to as an insurance

---

<sup>3</sup> Note that this is a simplistic way of describing pooling risk. Other factors are also involved that are not relevant to this study. Brockett, Witt, and Aird (1991) provide an overview of reinsurance and the reinsurance market.

premium, in exchange for a promise made by an insurance company to pay for the total loss incurred, if any one insured driver causes an accident, and injures someone in that accident (and for which a bodily injury claim is made). This agreement forms an indemnification insurance contract between an insurance company and insured driver.

Not only can the financial assets of insured drivers and claimants be protected by MVA insurance compensation, so too can a MVA insurance company protect its assets by purchasing insurance. According to Harrington, Niehaus, Kleffner, and Nielson (2004), “reinsurance is the purchase of insurance by an insurer” (p. 89). These authors note that the purpose of reinsurance is to reduce the insurer’s risk related to problems of underwriting practices and solvency issues. Reinsurance is a contractual agreement between an insurance company and a reinsurance company that essentially allows an insurance company to hold less capital while still being able to demonstrate solid financial strength to meet its obligations to those it insures. In short, a comprehensive MVA insurance scheme provides financial protection to claimants, insured drivers, and insurance companies.

In Canada, there are presently three different types of MVA insurance compensations systems:

- 1) Tort or at-fault system;
- 2) Pure no-fault system; and
- 3) Threshold, no-fault system (essentially a mix of the an at-fault and a no-fault system).

The first type of system is the traditional at-fault system within which compulsory no-fault benefits, called an add-on benefits plan, are provided. According to Witt and Urrutia (1983), in add-on benefits plans, claimants can access no-fault benefits from their own insurance company, regardless of fault, but they can also sue the at-fault party, regardless of the severity of their

injury, for the amount of accident benefits coverage they used (p. 634). Cost-wise though, a claimant's total award of damages from their at-fault claims may be reduced by the total accident benefits they received in their no-fault claim for the same accident. As noted by Brown (1988), "in add-on plans, which predominate in Canada, the amount of benefits paid corresponds exactly to the amount by which tort rights have been expunged" (p. 65). Alberta, the Atlantic provinces, and the two northern territories have this type of system.

A second type is a pure no-fault system, in which the right to sue a third party for damages has, for the most part, been eliminated. In exchange for the loss of the right to sue a more substantial amount of first-party benefits is paid out by a government authority in charge of the administration. Benefits are provided as long as a claimant continues to show need, which is typically assessed by a physician. The provinces of Quebec and Manitoba have this type of system.

A third type is a blend of a no-fault and at-fault system, often referred to as a threshold no-fault system. The purpose of this blended system is to bring together the strengths inherent in both a no-fault and an at-fault system. For example, a claimant can access a substantial amount of accident benefits from a no-fault system while the right to sue the at-fault party is still maintained. The premise of a blended system is to provide a substantial amount of no-fault accident benefits to cover the cost of the majority of a claimant's medical and rehabilitation expenses to offset the need for a claimant to have to sue the at-fault party for these expenses. As a disincentive to sue, a claimant must meet a certain level of eligibility to advance the at-fault claim. For example, a claimant's injuries must meet either a monetary threshold of health care services required by a claimant for medical/rehabilitation costs, a verbal threshold in which a physician has provided a medical opinion that a claimant's injury is "permanent and serious," or

a combination of both a monetary and a verbal threshold. Once a threshold has been reached, a claimant can then sue the at-fault driver for full compensation. Ontario is the only provincial jurisdiction in Canada that has this type of system.

This research involves a comparative analysis between an at-fault and a no-fault system. The following review of the literature focuses on the essential features of each of these types of systems as they have emerged (than on the blended features of a threshold no-fault system).

### **2.2.1 At-Fault MVA Insurance Compensation System**

One of the main purposes of an at-fault MVA insurance compensation system is to compensate an individual (referred to as a claimant) who has sustained injury caused by the fault of an insured driver.<sup>4</sup> This requires that a claimant's losses arising from an MVA be shifted to that insured driver, who then pays for these losses. Tort law of negligence, which underlies the at-fault system, has at its core the "ABC rule." As outlined by Linden (1988), a claimant in a negligence action is entitled to succeed if he is able to establish that: (A) a duty of care exists; (B) there has been a breach of that duty; and (C) damage has resulted from that breach. In this system, the ABC rule is used to determine if a claimant has the legal right to shift his or her loss to the alleged at-fault driver. If not, the loss (and subsequent costs) remains where it fell—on the back of the one injured (who, in turn, can receive benevolence of family members, friends, community associations, or funding from other private or government agencies).

If the ABC rule can be proved, but the claimant has also behaved in a careless manner, contributing to his own harm, then that portion of his loss cannot be shifted and must remain where it fell (Keeton & O'Connell, 1968, p. 310). As noted by Linden (1988), in this case the

---

<sup>4</sup> Or an individual named in the contract as set out in the Insurance Act.

ABC rule is extended to (D) the conduct of the at-fault party must be a cause-in-fact of the loss; and (E) the conduct of the injured party, such that he is not guilty of contributory negligence and he must not have voluntarily assumed the risk. Fleming (1992) describes cause-in-fact (Cause) as:

A complex set of conditions [that] include all antecedents, active or passive, creative or receptive, that were factors actually involved in producing the consequence...whether a particular condition qualifies as a causally relevant factor will depend on whether it was *necessary* to complete a set of conditions jointly *sufficient* to account for the given occurrence. (pp. 193, 194).

According to Dukelow and Nuse (1995), contributory negligence (CN) is defined as “a failure to take reasonable care of one’s own safety in circumstances where one knows or reasonably ought to foresee danger to oneself” (p. 250). For example, if the injured was not wearing a seatbelt while driving, resulting in a more serious injury in the accident (which would not have been sustained if using the seatbelt to restraints oneself). While the cause of the accident may not have been the claimant’s fault, his or her degree of injury was because he or she was not wearing a seatbelt. Whereas the onus of proof of the ABC rule of negligence rests with the injured individual (claimant), the onus of proof of the extension of D and E of this rule rests with the at-fault party (defendant).

The concept of CN is more straightforward than cause-in-fact. Therefore it is best to provide an example of a two-car collision to show how the rule of cause-in-fact is applied. In this example, car A is rear-ended by car B. During this accident, the driver of car B sustains a stroke causing brain damage. The driver of car B is claiming that his stroke was caused by the fault of the driver of car A and he is suing that driver. However the driver of car B (the claimant)

was in poor health prior to this collision, suffering from dizzy spells, temporary lapses of conscious, and was on medication for high blood pressure due to being overweight and smoking a pack of cigarettes a day (which could be interpreted as signs and risks factors of a stroke). While the driver of car A would be considered at-fault for the collision, the question arises, if not for the collision, would the claimant have sustained a stroke. Thus, the claimant, typically through his or her legal representative, referred to as a plaintiff lawyer, gathers evidence to advance a claim that it was the negligent behaviour of the driver of car A that caused the stroke. In turn, the insured driver of car A, through his or insurance representative, referred to as an insurance adjuster, gathers evidence to defend that claim, by bringing into question the claimant's pre-accident poor health and risk factors for a stroke (arguing that these factors ultimately caused the stroke). This defence claim might also involve the participation of a defence lawyer who the insurance adjuster hires to help defend the claim. If the claimant is successful in his claim (as viewed from the perspective of what a judge would decide if the claim were to be tried in court), then the claimant's full loss gets shifted to the at-fault party, who then is responsible to pay that claimant a financial award, referred to as damages.

A simple means of classifying damages is to divide them into special and general damages (Fleming, 1992). Fleming defines special damages as, pecuniary losses of "...all types of damage capable of (more or less) precise quantification, comprising medical and other expenses as well as lost earnings up to the date of trial" (p. 229). Special damages are usually payments for out-of-pocket expenses. The aim of special damages, according to Fleming, "...is to put the victim in the same financial position he would have been in had the accident not happened." Special damages are quantifiable, and in this regard Fleming (1992) notes: (1) they are subjected to relatively well defined rules of calculation; and (2) the defendant is entitled to

notice of these quantifiable losses because they help the defence evaluate the claim. Special damages can include lost wages due to a claimant's inability to return to work because of his or her injuries, and the cost of medical and rehabilitation treatment that he or she paid for personally.

General damages are not quantifiable, and in this regard, Fleming (1992) defines general damages as

...non-pecuniary loss...[which] poses an entirely different problem: money may compensate for loss of earning and other pecuniary loss, but can neither undo nor offer an equivalent for pain and distress...not all the gold in the Bank of England can make good excruciating pain, loss of sight or limb or cosmetic injuries. (p. 236)

General damages are therefore also referred to as an award for “pain and suffering” caused by the injury. Thus, the total dollar amount of damages a claimant can receive in an at-fault claim encompasses all that a claimant has lost, both pecuniary (special damages) and non-pecuniary (pain and suffering), from the time of the accident forward into the future. This is referred to as compensation in full. As noted by Hale and Cooley (1912), “compensation [in an at-fault claim] is the fundamental and all pervasive principle governing the award of damages with the measure of that compensation being to make the plaintiff whole” (p.4).

Schroeder (1989-1990) characterises an at-fault system as being focused on the “private undertakings between a claimant and an at-fault party” (p. 445). Typically, MVA claims in an at-fault system are administrated by insurance adjusters within a private insurance industry,<sup>5</sup> working on behalf of their insured drivers who are at-fault for the accident, through a third-party

---

<sup>5</sup> Through an insurance company licensed to practice within a given jurisdiction.

contract (the third-party being the claimant). The stipulations of a third-party contract are outlined in Section A of an insured driver's standard automobile insurance policy.<sup>6</sup>

## **2.2.2 Purpose of a No-Fault MVA Insurance Compensation System**

The purpose of a no-fault insurance compensation system is to provide accident and income replacement benefits to a claimant who has been injured from a motor vehicle accident, regardless of who was at-fault for that accident. By eliminating the concept of fault<sup>7</sup> from the eligibility criteria for access to funding, the lengthy process of investigating fault is also eliminated<sup>8</sup>. As such, and in theory, accident benefits can be provided to a claimant sooner than it would take to access benefits from a fault-based system. As Brown (1988) notes, "the purpose of no-fault automobile insurance is to make compensation more widely and more swiftly available when personal injury or death is caused by a motor vehicle accident" (p. 1). In this manner, as pointed out by Stephenson-Cooper (1996), an additional goal of a no-fault system is that it focuses on rehabilitation (p. 19).

Additionally, when the concept of fault is eliminated as an eligibility criterion, shifting loss from a claimant to an at-fault party is not necessary. This is because the loss can remain where it fell (on the back of the injured individual) and his or her own insurance company pays for this loss. In this manner, the "at-fault" driver is no longer a party to the insurance contract, and in effect, he or she does not actively participate in the claims management process in an "at-

---

<sup>6</sup> In Alberta, this type of policy is referred to as an SPF 1. In Ontario, it is referred to as an OAP 1.

<sup>7</sup> This is a legal definition of fault (based on negligence). This differs from fault determination by insurance companies, which is necessary to ascertain in order to adjust a policyholder's premium if they are determinate to be at-fault for the cause of the accident.

<sup>8</sup> It is important to note that a claimant in a no-fault system must still show proof that the injuries sustained were caused by an MVA.

fault” role.<sup>9</sup> Thus the insurance contract is between a claimant and his or her own insurance company, wherein the claimant is considered a first-party to the contract. In a first-party insurance contract, the amount a claimant receives is determined by a pre-set, standard schedule of benefits. These benefits, referred to as accident benefits, are part of the Section B coverage of a standard automobile insurance policy.

First party insurance is akin to a social system of compensation in that it provides some amount of benefits to a larger portion of the population, usually for a limited time. Whereas a claimant in an at-fault system has the legal right to receive full compensation for past and future expenses and for economic loss for pain and suffering, in a no-fault system he or she receives only partial compensation. The trade-off is that more claimants can access the services required to meet their immediate needs, but often this amount is less than what a claimant in an at-fault system has the right to access.

### **2.3 Analysis of Six Influential Studies on MVA Insurance Compensation Systems**

A review of the literature identified six North American studies, conducted between the late 1920s and late 1980s, that seem to have had a central role in shaping MVA insurance policies and practices in Canada today. These are as follows:

- Committee to Study Compensation for Automobile Accidents (1932), more commonly referred to as the Columbia Study (1932);
- Conrad et al. (1964), more commonly referred to as the Automobile Accident Costs and Payments (AACP) Report (1964);

---

<sup>9</sup> Note that if the insured driver is the claimant, then he or she would participate.

- Keeton and O'Connell (1965), more commonly referred to as the Keeton & O'Connell Plan (1965);
- Linden (1965), more commonly referred as the Osgood Hall Study (1965);
- Snider et al. (1973), more commonly referred to as the Saskatchewan Study (1973); and finally
- Osborne (1988), more commonly referred to as the Osborne Report (1988).

What follows is a brief overview of each of these six studies. A more detailed summary of these studies can be found in Appendices A1 to A6.

### **2.3.1 The Columbia Study (1932)**

The aim of the Columbia Study (1932) was to investigate the problem of compensation for injuries caused by motor vehicle accidents (MVAs) and to make suggestions for the solutions of the problems involved. The focus of the Columbia Study was on the economic loss caused by personal injury and death, not on the amount of property damage sustained. This study examined personal injury claims data from MVAs that occurred between 1926 and 1931 in six USA districts. The focus of the examination was on the economic loss of a claimant's wages, funeral and medical expenses, including the distribution of this burden or loss on society. The study did not address losses associated with pain and suffering.

During the timeframe of the Columbia Study, only one USA state and no Canadian provinces or territories had compulsory liability insurance laws in place for personal passenger cars. This left most drivers without any financial means to compensate an injured claimant if they were found to be at fault. Also relevant is the fact that all USA jurisdictions still had the strict contributory negligence laws in place, which meant that even if a claimant could prove the accident was the fault of another, the claimant had to be completely without blame to recover

anything from the at-fault driver. Note that in Canada, the law of comparative negligence was in place for all jurisdictions. This meant that the total settlement amount a claimant received was reduced by the percentage of blame that could be attributed to the fault of that claimant.

Overall, the results of the Columbia Study demonstrated that 27% of the 4,425 claimants who sustained either a permanent disability or a temporary disability were not insured. For the 87% who had liability insurance and sustained permanent disability, they received an average total payment of 45% of their aggregate loss (economic loss) from an at-fault party. This is compared to only 17% of the permanent disability claims, made by uninsured individuals, who received some amount of payment. The study indicated that, in most cases, the burden of paying for health care costs remained with the injured person or his family. If the individual, or their family, could not pay, then the financial burden fell to hospitals, physicians, tradesmen, landlords, friends, and the community at large.

The results of the Columbia Study also demonstrated that time to settle tort claims ranged from one to three years. However, most cases were resolved without trial. As noted by the authors, “Studies of the results of tried cases show that a verdict is rendered for the plaintiff in two-thirds of the cases, but the cases tried may be a selective group representing those in which the plaintiff was able to overcome [the difficulties of procuring sufficient evidence to satisfy a jury that his injury has been caused by the defendant]” (p. 33). The Columbia Study committee recommended that a no-fault insurance plan, theoretically fashioned after the Workers’ Compensation Board (WCB)<sup>10</sup> plan, should be implemented. The authors suggested that this type of no-fault system would provide an adequate amount of compensation to all who were

---

<sup>10</sup> Workmen’s Compensation Board was the term in use at the time the Columbia Study (1932) was conducted. The writer has chosen to use the current name, Workers’ Compensation Board (WCB).

injured, thus eliminating the personal and societal responsibility of bearing these losses. The outcome of the Columbia Study, in part, resulted in the province of Saskatchewan implementing compulsory no-fault benefits into its MVA scheme in 1946. No other jurisdiction in the USA or Canada implemented a no-fault MVA insurance compensation scheme following the completion of this study.

### **2.3.2 Automobile Accident Cost and Payments (AACP) Report (1964)**

There were three main objectives of the AACP Report (1964). The first was to gain an understanding of the Michigan MVA insurance compensation system for personal injuries, in terms of what the claimant lost (from the claimant's perspective), as opposed to the value of the claim (from the insurer's perspective). The second was to examine the attitudes of key players regarding their level of satisfaction with the amount of compensation and how fairly they were treated. The third objective was to examine European jurisdictions to understand their MVA schemes of compensation (England, Sweden, France, and Germany).

The AACP Report focused in on a subset of local jurisdictions in Michigan, and examined claimants' economic loss, and cost of medical expenses from MVA claims that had occurred in the calendar year of 1958. This report was the first to examine other compensation sources that the claimant accessed as a result of the MVA, including private sources of insurance such as life insurance and other public sources of compensation (including sick leave and disability, WCB, social security, and other pension plans). The purpose was to understand other sources available to MVA claimants.

At the time of the AACP Report, three USA States (New York, North Carolina, and Massachusetts) had implemented compulsory liability MVA insurance, but no Canadian jurisdiction had yet implemented a compulsory liability MVA insurance plan. All Canadian

jurisdictions had, however, implemented financial responsibility laws. These laws essentially held an insured driver legally responsible for damages arising out of a motor vehicle accident by suspending the driving privileges of negligent parties until: (1) he or she could show proof of available finances to pay for the damages that they caused; and (2) such judgement was satisfied (Special Committee (Alberta), 1948, p. 10). As well, by this time, Canadian jurisdictions had implemented social programs such as Old Age Security and Medicare. These social programs helped to offset the medical costs associated with motor vehicle accidents. The Saskatchewan Government Insurance Office (1967), in their submission to the Royal Commission of British Columbia on Automobile Insurance and Related Matters wrote, “obviously the introduction by government, of hospital and medical insurance schemes, has given some relief from the burden of out-of-pocket expenses” (p. 15).

In addition, by the 1960s, several of the USA states, including Georgia, Tennessee, Mississippi, and Wisconsin, had implemented the comparative contributory negligence rule,<sup>11</sup> which replaced the previous law of contributory negligence. This meant, for claims made within these jurisdictions, a claimant no longer needed to be completely without blame in order to receive compensation from an at-fault party. Instead, if it was found that a claimant behaved in a careless manner so as to have caused his or her harm, then the total settlement amount would be reduced proportionately by the degree of contributory negligence that claimant caused.

The findings of the AACP Report (1964) demonstrated that, of all the MVA claims, 65% received some amount of compensation from some source, and of this, 63% received compensation from private insurance, including 37% from an MVA claim. Of the seriously

---

<sup>11</sup> For further details on the changes made to the tort law of contributory negligence refer to: Cooter and Ulen (1986) Low and Kiholm Smith (1992).

injured, the majority (70%) experienced economic loss in the small to medium range, which was defined by the amount of their economic loss. Of the seriously injured, the tort system (at-fault system) provided the largest portion of compensation (46%) when compared to other sources of compensation available to these claimants. Other sources of compensation came from claimants' medical insurance plans and life insurance plans (27%) and some received compensation from social programs (13%). From those that received compensation from the tort system, the portion of the amount of loss they received, based on their claimed loss (defined by the amount of their economic loss), was as follows:

- Small loss – 64% received over 76% of their loss
- Large loss – 29% received over 76% of their loss
- Very large loss – only 8% received over 76% of their loss

Based on these findings, the author of the AACP report concluded that a large percentage of those with small economic losses were overcompensated, whereas only a small percentage of those with large and very large economic losses were overcompensated. Those with large to very large economic losses received only a fraction of what they had lost, including wages and reimbursement payments for medical bills.

The AACP report also examined claimants' degree of "hostility" about the claim<sup>12</sup> (with levels of low, medium, and high "hostility") in regards to the settlement amount. The results were as follows:

---

<sup>12</sup> The degree of hostility was based on set of questions that were developed as part of the study.

- 20% of “low hostility” claimants received over 150% of economic loss [high percentage payout] compared to 15% of “high hostility” claimants who also received over 150% of economic loss [also a high percentage payout];
- 34% of “low hostility” claimants received a low percentage payout, compared to 66% of “high hostility” claimants who received a low percentage payout; and
- 62% of “low hostility” claimants that received a high percentage payout believed the settlement to be generous and fair, compared to only 22% of “high hostility” claimants that received a high percentage payout who believed the settlement to be generous and fair.

Finally, the results demonstrated that at-fault insured drivers played a relatively minor role in a claim, with most not knowing how the cases settled (e.g. negotiated or court settled) or for what amount. As quoted in the AACP Report (1964):

The statistics confirm what lawyers and adjusters know—that questions about negligence, proof, the defendant’s ability to pay, and the claimant’s desire for an end of the litigation, lead to the compromise of claims at levels which correspond to no theory of legal right. Furthermore, the factors tending toward compromise are much more powerful in the cases of large economic loss than they are in the small ones. (p. 199)

The author of the AACP Report was of the same view as the authors of the Columbia Study, namely, that a no-fault scheme needed to be implemented in order for the majority of claimants to access compensation. However no USA or Canadian jurisdiction followed this recommendation after the release of the report.

### **2.3.3 Keeton & O'Connell Plan (1965)**

The purpose of the Keeton & O'Connell Plan (1965) was to demonstrate that the majority of claimants of an MVA would receive adequate compensation from a plan that was provided, regardless of fault, using basic forms of compensation. This Plan was developed due to the interest by key stakeholders, such as insurance companies, and claimants (through their plaintiff lawyers) to understand the benefits and risks that would ensue if aspects of an at-fault insurance compensation system were replaced by a no-fault scheme. The main goal of this no-fault plan was to provide basic protection to the majority of claimants. The authors reviewed other studies that had proposed “models for reform,” such as the one outlined in the Columbia Study (1932), the AACP Report (1964), and those that had been either proposed or implemented in Europe, Australia, and New Zealand. Other than what had been reported by the others studies, no actual claims data was reviewed in this plan.

The authors concluded that an at-fault MVA insurance compensation system was “flawed” as a means of compensation for several reasons. First, fault was difficult to prove. Second, due to court congestion, this type of system was cumbersome and slow in bringing claims to trial. Third, this system was inequitable, as minor injuries were overcompensated and serious injuries were under-compensated. Fourth and finally, this type of system was viewed as being “excessively expensive”. Due to these “flaws” the authors proposed their own theoretical no-fault MVA insurance compensation plan, which they viewed as: (1) an optimal means of providing compensation to claimants regardless of fault; and (2) able to be administered for less than the cost of the current at-fault system. Keeton and O'Connell referred to this no-fault scheme as the Basic Protection Automobile Insurance Plan and it laid out a 27-item plan of the basic needs that ought to be covered. While the Keeton & O'Connell Plan (1965) generated

interest, which resulted in proceedings of a conference being published,<sup>13</sup> no tort law reformations in either the USA or Canada were immediately implemented. The Keeton & O'Connell Plan, however, has come to be viewed as a leading reference for a basic “blue-print” for a no-fault protection plan.

#### **2.3.4 Osgoode Hall Study (1965)**

The Osgoode Hall Study (1965) was conducted to understand the financial impact on victims of automobile accidents that had occurred in the province of Ontario, Canada. The study, commissioned to understand the Ontario at-fault motor accident insurance compensation at the time, reviewed data from accidents reported in the calendar year of 1961 that occurred in one jurisdiction in the province (the county of York).<sup>14</sup> The author concluded that while the overall estimate of tort recovery was 37% of claimants’ economic losses, the majority of the claimants (54%) received nothing at all from the tort recovery, many received varying portions of what they lost (17%), and a fair amount (29%) received more than what they had lost, once economic loss and loss from pain and suffering and double recovery laws was considered. It is likely that those claimants receiving nothing could not prove that the driver’s actions were negligent. Also, of all those injured, 86% had some non-tort recovery, representing 23% of the total economic loss. For the combined tort and non-tort recovery, 95% of the claimants received some compensation. The total amount recovered by all injured claimants was 60% of the total economic loss.

---

<sup>13</sup> Refer Keeton, O'Connell, and McCord (1968).

<sup>14</sup> Including Peel Region, Halton, and Hamilton, but excluding Metro Toronto, North York and Etobicoke.

Overall, the results of the Osgoode Hall Study showed that claimants with minor injuries fared better compared to those who were seriously injured (104% of total losses were recovered for claimants with minor injury from combined tort and non-tort recovery compared to 74% of total losses that were recovered for claimants who were seriously injured). Families who suffered a fatal loss fared the worst (only 13% of total losses were recovered by this group). Additionally, a subset of the serious cases was examined to determine their hypothetical legal losses (that is, what they would have likely obtained for both pain and suffering and economic loss if their cases were tried in court). This amount was referred to in the study as the total legal costs. The total legal costs to the actual tort recovery were calculated. The majority of the seriously injured, whose losses were large, received anywhere from nothing to 12% of their total losses. As the author wrote,

in conclusion, the total recovery percentages are higher in the less serious cases and lower in the more serious cases. This pattern holds true both in the tort system and the non-tort system. These disparities are much sharper in the tort system where the percentages of total recoveries fluctuate more widely than they do in the non-tort recoveries. (Chapter II p. 4)

It was noted that the results of this study were similar to the results of the other studies; namely, that the tort system is slow, inequitable, and costly to administer. Whereas the authors of the previous studies had recommended that a no-fault system replace the tort system, Linden, the author of the Osgoode Hall study, was of the view that a no-fault system and an at-fault system could “peacefully co-exist.” Therefore, the recommendation was that some form of no-fault accident insurance coverage be added as a mandatory part of all standard automobile insurance policies. The Ontario government eventually implemented a mandatory no-fault

aspect to its MVA insurance scheme some 12 years after the Osgoode Hall study was conducted (Linden, 1973, p. A3).

### **2.3.5 The Saskatchewan Report (1973)**

In 1946, the government of Saskatchewan implemented a public corporation to manage its motor vehicle accident (MVA) insurance compensation system. With over half of Saskatchewan's population engaged in the business of farming (on mostly family operated farms), the government recognized the importance of what they described as "the economic status of the family" (Saskatchewan Report, 1973, p.7). In particular, the report highlighted that injury from an MVA could be disastrous for a family if one of its members, especially the head of the family, could not work. In 1946, the province of Saskatchewan, through the Saskatchewan Government Insurance Office (SGIO), introduced mandatory no-fault benefits (first-party coverage). It is important to note that: (1) this was not a pure no fault system in that private insurance companies were also allowed to sell MVA insurance (so, in essence, there was a competitive market for MVA insurance); and (2) compulsory liability MVA insurance was still not mandatory at that time.

Also of relevance is the fact that, in 1947, Saskatchewan had implemented a universal, provincial hospital care plan followed by a universal medical insurance plan in 1962; both of which Canada's federal government agreed to cost-share. The implication, as highlighted in the Saskatchewan Report, was that: (1) for MVA claimants, access to hospital-based care was available without regard to private insurance or other financial capacity; and (2) a large portion of the medical costs were not borne by the MVA insurance companies including the SGIO, but by Saskatchewan's public health care system. The SGIO commissioned the Saskatchewan Report (1973) as an independent study to review, among other things, Saskatchewan's

experience pertaining to claimants' economic losses caused by motor vehicle accidents since the inception of this arms-length, government-operated system in 1946. Data from the SGIO was analysed for all accidents that occurred between May 1, 1962 and April 30, 1963, primarily because data on these accidents was complete and, in the practical sense, settlement of claims and claimant's injuries were more or less final.

Overall, the Saskatchewan Report confirmed that, due to the public hospital plan, nearly all of the claimants bore no excess of medical expenses personally. Also, SGIO incurred little expense for health care services paid outside of the public hospital plan due to claimants accessing funding from other sources. The report also noted that 93% of bodily injury claims were small loss claims, which was defined as the total amount of money a claimant received by way of settlement of their motor vehicle accident claim. Approximately 26% of victims recovered some amount from an additional source, other than the MVA claim. The results also showed that 52% of the claims settled within three months or less, with only 0.3% of the claims taking longer than two years to settle. Additionally, 83% of claimants interviewed were satisfied with their final settlement. Also of interest was, for claims that proceeded to court, 78% of victims indicated their testimony was biased towards presenting information that benefited their own interests.

The findings were of importance to the SGIO in understanding: (1) its costs associated with the changes made to its MVA insurance compensation system; and (2) with the level of satisfaction its insured drivers had with both the changes made to a government managed scheme, and with the introduction of the compulsory no-fault portion of the plan (Saskatchewan Government Insurance Office, 1967, p. 56).

### **2.3.6 The Osborne Report (1988)**

At the time the Osborne Report (1988) was conducted, all jurisdictions in Canada had implemented some form of mandatory MVA insurance compensation, whether it be at-fault or no-fault. As well, by the time of this study, all provinces and jurisdictions had implemented a universal Medicare system, along with implementing other sources of social schemes of compensation, such as the Old Age Security Pension Plan. Ontario also had an at-fault MVA insurance compensation system with mandatory add-on no-fault benefits. At issue in the latter part of the 1980s was the rising cost of liability insurance in general. Therefore, as requested by the Attorney General and the Ministry of Financial Institutions, the Honourable Justice Coulter Osborne undertook an inquiry into Ontario's at-fault system of compensation for injury from a motor vehicle accident and the consequences of the implementation of a no-fault system (Osborne Report, 1988, p. x). Among other things, Osborne was to examine whether the implementation of either a no-fault MVA insurance compensation system plan, managed via the private insurance sector, or a publicly governed MVA insurance compensation system, would offset the rising costs of MVA liability insurance in Ontario and improve the timeliness and equitable access to compensation for injured victims.

The results of this study showed that, overall, close to half of the settlement costs for at-fault claims (45.6%) were for general damages; 10% were for future employment income, 13.3% were for loss of income; 1.4% were for future care costs, and 2.5% were for past expenses, such as medical expenses (e.g. physiotherapy costs). When broken down by small, medium, and large loss claims, using ranges of settlement costs, however, the following results emerged:

- Small loss claims – 70.5% of the amount was for pain and suffering; 10% of the amount was for past lost employment income; 2.6% of the amount was for past

- medical expenses; and there was no amounts for future cost of care or for future income loss;
- Medium loss claims – 47.2% was provided for pain and suffering; 16.7% was for loss of past employment; 3% was for past medical; and 3% represented loss of future employment; and
  - Large loss claims – 27% was provided for pain and suffering; future income loss was 25.5%; past income loss equalled 11.5%; past medical was 1.4%; and future care was 4.1%.

As well, the results indicated that there was a strong belief among key players in the Ontario MVA system (an at-fault system at that time) that the less severely injured claimants were being generously compensated. That is, they believed that claimants with small losses received more in the way of damages for pain and suffering compared to claimants who suffered medium and large economic loss. As well, the report indicated that claimants in need of rehabilitation were not getting immediate access to treatment because insurers were taking the approach that cost must first be incurred, followed by a wait-and-see approach as to whether or not they would be reimbursed by the MVA insurance company. This created a problem in that no one, including claimants and health care professionals (HCPs), was willing to incur cost for paying for a service with only the hope of getting reimbursed at some later date, if at all (p.162). The study identified that this situation created a delay in the implementation of necessary rehabilitation services. The Osborne Report also cited an overall lack of understanding of the effectiveness of rehabilitation.

Pertaining to accident benefits, it was noted that the “[Insurance Bureau of Canada] IBC data suggested that very few cases involved rehabilitation expense of more than \$25,000” (p.

164).<sup>15</sup> The data also showed that the \$25,000 limit was reached in about 30 cases per year (0.1% of the cases in which Section B medical payments were made). However, as Osborne noted:

[this is] far from conclusive evidence as to the adequacy of the \$25,000 rehabilitation limit...but the main problem is not this limit, [or] the 4-year limit, but lack of access to a benefit. It is apparent that better coordination of medical and rehabilitation no fault resources is needed...the present system lacks an effective dispute resolution mechanism...too often, rehabilitation proposals made by insureds or their representatives go unanswered. Too often, rehabilitation is delayed while awaiting the consultation and report of the insurer's medical advisor...the net result is that rehabilitation is not undertaken or is undertaken so long after the accident as to limit its effectiveness. (p. 165)

Osborne provided recommendations that included an increase of accident benefits from \$25,000 to \$500,000. There was no rationale as to why this specific amount was identified, beyond Osborne's view that the amount of accidents benefits should be more substantial than \$25,000 per claimant.

Osborne could not predict any cost savings if Ontario's system changed from a privately managed scheme to a government managed one. He shared Linden's view (who was the lead author in the Osgoode Hall Study, 1965), that a no-fault and an at-fault system could live in "peaceful coexistence." Osborne suggested that such harmony could be created if an essential

---

<sup>15</sup> This was the maximum available amount of add-on, no-fault benefits in place at the time the Osborne Study was conducted.

feature of a claimant's right, offered via an at-fault system, was paired with an essential feature of immediate access to benefits, offered via a no-fault system. Osborne (1998) wrote:

Tort law's capacity for fairness and justice should not be ignored...the public's sense of fairness will not be satisfied if fault is left to be dealt with solely through the criminal justice system and the premium rating system...the legitimacy of the co-existence of no fault and tort requires first that there be a substantial expansion of the quantum of no fault benefits and the eligibility of criteria for these benefits; and second, that the compensation plan be capable of being delivered through the automobile insurance system at a reasonable cost. (pp. 44, 46)

Osborne additionally stated that rehabilitation should be clearly defined and benefits should be made available to the claimant based on his or her treating health care professionals' opinions and not on the opinion of the insurer's independent medical assessments. While a threshold no-fault system was not recommended, Osborne indicated that there should be a threshold of recovery for pain and suffering awards, which was based on a monetary cap for the less serious cases. In 1990, against the recommendations of both Osborne and Linden, the Ontario government implemented a threshold, no-fault MVA insurance compensation system.

### **2.3.7 Summary of the Results of the Six MVA Studies Examined**

Overall, most of the studies reviewed concluded that an at-fault MVA insurance compensation system was:

- Inequitable, in that tort recovery was not available for claimants who could not prove fault (and which was most disastrous for claimants who sustained large economic loss and who had no other means of compensation);
- Costly, due to the amount of money used to investigate and prove fault;

- Adversarial, in that an at-fault systems often left the less seriously injured overcompensated and the more seriously injured without enough compensation; and
- Unresponsive, in that court congestion led to long delays in accessing compensation, (often leading to limited or no immediate rehabilitation).

Addressing the challenge in finding and proving fault, as the Saskatchewan Study (1973) found, “responsibility for the accident, in terms of fault, apparently can be determined in only about one-third of all accidents” (p. 34). In short, as cited by O’Connell and Kelly (1987), following the submission of Keeton & O’Connell’s Basic Protection Plan of 1965, “As one plaintiff’s lawyer put it after six years of legal battle before settlement of a complex liability case, ‘this type of litigation is war—shin-kicking litigation’ (p. xii).

When it came to an at-fault system that tends to over-compensate claimants of small losses, both the AACP Report (1964) and the Saskatchewan Study (1973) found that, by the mid-1960s, most individuals were accessing some form of compensation from sources other than motor vehicle accident insurance systems, such as social security, life insurance, and publicly funded health care systems. As identified in the AACP Report (1964), all the MVA claimants received some amount of compensation from some source. As highlighted by Osborne (1988), in considering the appropriate system of compensation for those injured in motor vehicle accidents in Ontario...it quickly became apparent to me that motor vehicle accident compensation should not be considered in a vacuum. Social conditions, the availability of long- and short-term disability coverage, and existing social programmes must be taken into account. (p. 2)

Pertaining to an at-fault system in which most claimants with large losses are undercompensated, Keeton and O'Connell (1968) wrote:

Measured as a way of compensating for personal injuries suffered in automobile accidents, the present [at-fault] system is a dismal failure. Many injured persons receive nothing at all. Many others receive far less than their out-of-pocket losses...due to the financial irresponsibility of a substantial percentage of drivers. (p. 40)

As identified in the Osborne Report (1998), the greater the loss, the less a claimant is compensated for pain and suffering. In this regard, Keeton and O'Connell (1965) have referred to compensating loss for pain and suffering for those who are seriously injured as elusive. These authors wrote, "the standard for measuring damages for pain and suffering does not attempt to shift this burden fully [to the at-fault party] but rather seeks to provide 'fair and reasonable compensation'..." (p. 329). The myth of achieving full compensation also rests on the notion that court delays, caused by congestion of the courts in processing claims, favours the defendant rather than the plaintiff (Columbia Study; p. 35).

The Columbia study also cited that moral hazard needed to be considered when making an injury claim. Traditionally, moral hazard refers to an insured's incentive to take less care in reducing his or her expected losses when he or she is aware of, and assumes that, his or her loss will be covered by insurance ex-ante (which means prior to an event occurring that gives rise to an insurance claim). However a moral hazard on the part of a claimant's behaviour, referred to as ex-post moral hazard by Cummins and Tennyson (1996), can also exist when full compensation is made available because there is incentive to exaggerate ones losses, or avoid getting better, as a means of increasing the amount of damages one can recover after an event has occurred and which gives rise to a claim. According to the Columbia Report (1932):

In motor vehicle accident litigation the temptations to commit fraud are great. If there is no disinterested witness to contradict the testimony of a litigant, a story can easily be prepared which will satisfy a jury. If a witness has been well coached by the attorney or by the medical specialist, a slight injury can be magnified until it appears a source of permanent disability, or a serious injury can be made to appear trivial...the temptation to fraud and exaggeration will always remain, so long as large sums may be won by such means. (p. 38)

Finally, as noted in the Osborne Report (1988):

Rehabilitation has been relegated to the position of a footnote in the standard automobile policy. It cannot be allowed to remain there. It is apparent that better coordination of medical and rehabilitation no fault resources is needed. More, not less, of the disability dollar should go to rehabilitation in those relatively few, but serious cases in which rehabilitation would be of assistance to the injured person. (p. 165)

Osborne was of the view that, rehabilitation, as an essential feature of a compensation system, could not be achieved within the framework of an at-fault system. He wrote, "the tort system, involving as it does delayed lump sum compensation, provides a disincentive to rehabilitation...I think the evidence is overwhelming that rehabilitation must be a first party obligation" (p. 520).

Overall, these legal scholars tended to agree that the at-fault systems they examined were so fundamentally flawed that their ability to fairly compensate claimants, while keeping the cost to drive affordable for the motoring public, was questionable. The implementation of a no-fault MVA insurance compensation system was postulated as a remedy to the aforementioned challenges imposed by an at-fault system. As pointed out by Linden (1973), "numerous critics in

Canada denounced tort law as a method of accident loss administration and eyed rather wishfully [no fault systems]” (p. A1).

## **2.4 Access to Benefits by MVA Claimants with Traumatic Brain Injuries**

Access to benefits from a motor vehicle accident (MVA) insurance compensation system is based on several factors, including whether or not the material cause of the injury was an MVA, and the degree of injury sustained. The degree of injury then dictates the type and amount of funding accessed through this type of system. Included in this PhD study is an examination of the difference between a group of individuals claiming to have sustained a mild traumatic brain injury (TBI) in an MVA, compared to a group of individuals who are claiming to have sustained a moderate/ severe TBI from an MVA on measures of adversarialness, cost, responsiveness, and recovery. This section of the chapter examines the literature on the incidence of TBI caused by an MVA, and the methods used to measure the degree of TBI and the type of medical and rehabilitation services provided to those who have sustained a TBI.

### **2.4.1 Incidence of Traumatic Brain Injury Caused by a Motor Vehicle Accident**

Just as the advent of personal car travel spawned the debate of how best to design a motor vehicle accident compensation system, so too did it create the need for advances in the medical and rehabilitation management of TBI from motor vehicle accidents. As highlighted by Corrigan (2001), “beginning a quarter of a century ago, advances in medical science and emergency service delivery systems increased survival for very severe traumatic brain injury (TBI)” (p.1). The research that emerged in the 1970s and 80s indicated that one of the leading causes of TBI was from motor vehicle accidents. For example, Kraus (1984), who analysed over 3,300 cases of traumatic brain injury, over a period of one year, in 1981, in San Diego, California, found that

the leading cause of TBI was motor vehicle accidents, which represented approximately 42% of the total causes. Traumatic brain injuries caused by falls were second at roughly 21%.

As noted by Fearnside and Simpson (2005), this increase in injury prompted a rash of government and corporate initiatives aimed at creating public awareness for the purpose of changing behaviours of drivers and their passengers (p. 17). Examples cited by these authors included promoting the use of seatbelts and avoiding drinking and driving; improving road safety; and improving automobile design. It appears that these initiatives have had a positive outcome in reducing severe injury from motor vehicle accidents. According to data collected by the Canadian Institute for Health Information (2006), TBI admissions to hospital due to motor vehicle accidents decreased in the decade of 1994 to 2004 (p.11). For example, the CIHI reported that for the age range from 0 to 19 years old, when the risk of injury from a MVA is the highest, hospital admissions for TBI caused by an MVA was approximately 50%. As of the reporting period 1999 – 2000, this percentage had reduced to approximately 32% and by the reporting period 2003 – 2004, the percentage had reduced to approximately 24%. As of the reporting period 2008-2009, motor vehicle traffic injuries represented 8.6% of all injury hospitalizations (2010, p. 6).

While falls now represent the leading cause of head injury hospitalizations for all ages combined, as reported by (Canadian Institute for Health Information, 2010, p. 5), the incidence of TBI caused by an MVA still remains a concern. The Canadian Institute for Health Information (2010) reported that, “[traumatic brain injury caused by motor vehicle accidents] are

predicted to be the second leading cause of potential years of life lost and the third leading cause of disability-adjusted life years<sup>16</sup> by 2020” (p.6).

#### **2.4.2 Advancements Made in the Measurement of Traumatic Brain Injury**

Just as the leading causes of TBI have changed over time, so too has there been change in the manner in which TBI is measured. As Benton (1989) pointed out, much of what was learned of the dire behavioural consequences that may ensue from traumatic head injury came from clinical observations of head-injured patients (p. 4). It wasn’t until the late 1920s that research began to address a means of classifying head injury using a scale of measurement. Symonds (1928) was the first to report a correlation of the duration of states of consciousness to brain injury severity. He wrote, “I shall define concussion as a condition of subtotal cessation of cerebral function following immediately upon the injury, and lasting only a few moments, with subsequent complete recovery within twenty-four hours” (p. 829). Symonds then went on to describe severe concussion as follows:

The patient, having been completely unconscious for a few moments, partially regains his senses and passes into the state of stupor already described as a part of the clinical picture of severe concussion. Subsequently, instead of making that rapid progress towards a normal mental state which is characteristic of simple concussion, he remains stuporous, restless, and irritable. (p. 830)

Shortly thereafter, Russell (1932) established a means of determining when a patient, who having sustained an altered state of conscious, has returned to full consciousness. This was

---

<sup>16</sup> The disability-adjusted life year (DALY) is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death.

[http://en.wikipedia.org/wiki/Disability-adjusted\\_life\\_year](http://en.wikipedia.org/wiki/Disability-adjusted_life_year) [date accessed December 9, 2012]

done by recording the time it took a patient to recall his first memory following the initial trauma to the head. Russell referred to this as the period of post-traumatic amnesia. Russell (1932) wrote:

It has accordingly been found that the patient's subsequent memory of when he woke up provides a not inaccurate indication of when consciousness returned. By this indication, the duration of loss of consciousness can be estimated with fair accuracy even when the patient is seen for the first time long after the accident. (p. 554).

Russell categorized four discrete groups of individuals who sustained TBI, based on the time spent unconscious (p. 554). These were:

- Group A who were unconscious for less than 1 hour;
- Group B who were unconscious from 1 to 24 hours;
- Group C who were unconscious for more than 24 hours; and
- Group D who comprised the fatal cases (representing the group who never regained full consciousness prior to passing away).

This has become known as the Russell method of measuring post-traumatic amnesia (PTA).

However, as highlighted by Russell, this required a subjective measure, either by the patient himself, a family friend, or attending nurse, who recounted when the patient "woke up."

In a subsequent study by Symonds and Russell (1943, p. 7) qualifications were given when using a subjective report to determine PTA. First, they emphasised that measuring PTA using subjective, retrospective inquiry was a more convenient means of classifying the severity of head injuries to be used, for example, when a patient's records were not readily available. Second, they noted that it was necessary to exercise caution in accepting the patient's first memory of his surroundings as the end-point of coma, more so to reduce the risk of

underestimating the length of coma and hence degree of TBI. Nonetheless, as noted by Russell (1932), post-traumatic amnesia is a suitable assessment tool to identify cases of TBI, especially those who have sustained mild TBI, which might otherwise have been overlooked because of lack of other symptoms such as coma. Symonds and Russell (1943) continued to defend the use of their method of PTA, stating, “all that can be said for [the subjective and retrospective measure of PTA] is that it is the best single criterion at present available” (p. 7).

Years later, Levin, O'Donnell, and Grossman (1979) developed a scale that directly measured disorientation and amnesia prospectively (done by measuring forward in time from initial injury through to recovery of full consciousness). As noted by Levin and Grossman (1979), “it is our experience, however, that [questioning the patient after restoration of continuous memory] can be appreciably affected by variation across examiners, because there is no standardized procedure for measuring PTA or [retrograde amnesia]” (p. 575). These authors then developed,

The Galveston Orientation and Amnesia Test (GOAT) [which] is designed to be a practical, reliable scale that can be used at beside, or in the emergency room, by health service providers of various disciplines; a graph of serial scores conveniently depicts the recovery of the [TBI] patient who is no longer comatose. (p. 676)

At about the same time in Scotland, another technique for measuring TBI was being developed, referred to as the Glasgow Coma Scale (GCS). Teasdale and Jennett (1974) developed the GCS to independently measure three aspects of behaviour: motor responsiveness, verbal performance, and eye opening; all behaviours that could be consistently evaluated by physicians and nurses as a reliable measure of the duration of prolonged coma (p. 83). This scale became one of the most commonly used in hospitals and clinics in Canada and elsewhere. The

Glasgow Coma Scale is usually scored out of fifteen,<sup>17</sup> with a maximum of five points given for each of the three aforementioned behaviours exhibited by an individual. The three sub-scores are then totalled. A mild TBI is defined by having a GCS score of 13-15; a moderate TBI is defined as having a GCS score of 9-12; and a severe TBI score is defined as having a GCS score of 8 or less. As pointed out by (Kraus et al., 1984), the GCS was widely used: (1) for injury assessment in hospital emergency rooms in the United States, as well as by many ambulance personnel involved in the transport of injured persons; and (2) to judge neurologic progress by repeatedly using the GCS scale (p. 198).

While the GCS is one of the most commonly used measures of TBI severity, two of its limitations are: (1) that it can only be used to measure recovery prospectively, and (2) it cannot measure as accurately as the GOAT score can, when a patient has regained full orientation to person, place, and time. Therefore, the combined use of the GCS and the GOAT, in use today, allows for an objective measurement of both the depth and duration of coma through to recovery of a full state of consciousness.

#### **2.4.3 Treatment of Traumatic Brain Injury along a Continuum of Care**

Utilising a variety of techniques to evaluate and treat traumatic brain injury (TBI), along a continuum of care, has now become the standard (Zasler, Katz, & Zafonte, 2007, p. 6). Techniques along a continuum of care can be implemented by such health care providers as:

- Ambulance attendants at the site of the accident (where the GCS is implemented as part of the intervention);

---

<sup>17</sup> The five-point score for a verbal response is removed from the measure when, for example, an individual has had a tube inserted in his mouth and throat (referred to as being intubated) and hence a verbal response cannot be accurately ascertained. Thus the GCS is score out of 10 and is typically marked with the letter "T" to indicate that the patient was intubated at the time the measure was taken.

- Emergency personnel at emergency and urgent care facilities (where the GCS score can be repeated and radiological investigation undertaken);
- Hospital-based inpatient care staff, within such facilities as an intensive care unit (ICU) wherein the GCS, GOAT, and radiological investigations are utilised to serially measure cognitive recovery and identify any complicating factors; and
- Community-based health care professionals who address such aspects such as follow-up care (for those who have been provided with hospital-based care) or initial assessment (for those who have not been treated previously along the continuum of care), and which might involve use of the aforementioned techniques or the Russell method of measuring PTA, if no other means is available to determine whether or not an individual had sustained a TBI previous to having a community-based assessment.

The purpose of each aspect of this aforementioned continuum of care will be discussed in more detail next as it pertains to assessing and treating TBI.

Zasler et al. (2007) note that regional emergency medical services, using either ground or air transport, have been developed to promote quick evacuation (p. 6). As noted by Matouk, J., and Geurguerian (2007):

Initial evaluation [in the trauma room] is focused on a determination of the patient's level of consciousness, pupillary reaction and best motor response. It is important to document the patient's admission GCS score as a baseline for subsequent neurological examinations. A decreased level of consciousness...or significant mechanism of injury mandate urgent CT [computer thermography scan]. (p. 50)

For those injured individuals who present with signs and symptoms indicative of a more serious injury, such as radiological evidence of a skull fracture or brain swelling, he or she is typically

admitted to an intensive care unit (ICU) at hospital. In the case of the most serious degree of TBI, this might include transfer to a hospital that specializes in neuro-trauma care. As noted by Zasler et al. (2007) admission criteria, for hospital-based inpatient care, involve an intensity of medical and nursing care needs that require full-time monitoring and specialized rehabilitation expertise, as well as functional deficits that require a minimum of three hours per day of intense therapy (p.7). For those who have sustained severe TBI, treatment with a team of health care professionals trained in ICU care is the norm. As reported by Maas, Stocchetti, and Bullock (2008), “a major focus for neurointensive care is to prevent and limit ongoing brain damage and to provide the best conditions for natural brain recovery, by reducing brain swelling and raised ICP [intra-cranial pressure]” (p. 733). Additionally, given the degree of trauma, patients might then receive inpatient neuro/trauma rehabilitation.<sup>18</sup> As explained by Maas et al. (2008), “early and intensive rehabilitation is recommended to achieve the best possible functional outcome and social re-integration” (p. 735).

Once discharged, patients may require ongoing community-based care to achieve the goal of improved function and social re-integration. Community-based care typically includes re-assessment on regular intervals via hospital-based outpatient care, and/or ongoing treatment at a clinic that specializes in treating TBI. The type of care, as noted by Zasler et al. (2007), can range from a single type of treatment, such as physiotherapy, to a more co-ordinated and multi-disciplinary intervention, including physiotherapy, occupational therapy, speech-language therapy, and the like, and which may be provided in a variety of different community settings, such as the home, hospital out-patient, or day-care facility (p. 8).

---

<sup>18</sup> For additional information on medical and rehabilitation treatments for those who sustained a TBI refer to Chau (2007).

Community-based, single treatment care is typically the norm for individuals who have sustained a mild TBI, compared to a multidisciplinary approach for those who have sustained moderate to severe TBI. For many who have sustained a mild TBI, access to a community-based facility for assessment may be the first stop along the continuum of care (as their degree of initial injury either went under-diagnosed or did not warrant the use of emergency or ICU care and therefore was not initially diagnosed at all). Single treatment care most often includes services provided by a family physician, who monitors the individual. As the Toronto Acquired Brain Injury Network (2006) states, “...it is important to recognize that there is a significant group of individuals who experience a mild brain injury who continue to have deficits that can be considered severe and they can struggle with long-lasting and debilitating impairments” (p. 10). In these cases, a referral to a health care professional with expertise in neurology is typically made by the family physician wherein further diagnostic procedures such as radiological investigation or a neuropsychological assessment are conducted, and, if necessary, treatment is provided. Health care professionals who provide this type of service include neurologists, psychologists, psychiatrists or rehabilitation physicians (also known as physiatrists). Ongoing treatment for individuals who have sustained TBI is then dependent upon the outcome of these tests.

Paniak, Toller-Lobe, Durand, and Nagy (1998), however, found that for individuals who sustain a mild TBI, a brief single-session of educational and reassurance-oriented intervention is just as effective and highly patient-rated as a potentially more intensive and expensive model patterned after treatment for more severe TBI (p. 2020). It appears that this approach is similar to the approach suggested by Russell (1932), some fifty years previous to the research conducted by Paniak et al. (1998). Russell wrote:

Traumatic neurasthenia [akin to a mild TBI] in a patient is largely caused by fear—fear that he is not getting better, fear that he will never be fit for work, fear that his brain is damaged, fear that another head injury would be fatal, and so on. For these reasons, simple explanations directed towards adjusting the patient's attitude to his condition form a most important factor in the treatment of industrial accidents, not only those which involve the skull, but also those involving all parts of the body. (p. 600)

Whereas community-based interventions that focus on education and reassurance are recommended for those who sustained mild TBI, ongoing multidisciplinary community-based care is usually provided to individuals who have sustained moderate to severe TBI. This care, as pointed out by Zasler et al. (2007), is delivered by a team of health care professionals such as an occupational therapist, speech language pathologist, and psychologist. Case management is a service that is often provided to coordinate this care. Treatment is usually provided through a privately-funded clinic that specializes in treatment for TBI.

Regardless of TBI severity, community-based services might also include medico-legal or independent medical assessments (IME) for individuals who are seeking compensation from social security, workers' compensation, short-term and long-term disability insurance, personal injury litigation, and the like. The purpose of such an assessment is to provide an opinion as to: (1) the type and degree of injury sustained and whether the impairment has resolved; and (2) the likely cause of the injury sustained. Medico-legal assessments are not for the purpose of providing direct care to the individual. Instead they are typically requested to help resolve a dispute between the injured individual and his or her insurance adjuster (keeping in mind that the health care professional who has provided this type of assessment may be called to court to testify as an expert witness). On this point, Zafonte and Martelli (2002) have written:

Within the context of the IME [Independent Medical Examination], it is important for the examining clinicians as well as lawyers to remember that no patient physician rapport is ever established. Specifically, the party being examined is the examinee and the evaluator is the examiner. (p. 13)

In a previous article written by Martelli, Zasler, Nicholson, and Heilbronner (2001), they noted that in terms of individual versus the social good, there is a dichotomy between the clinician and the non-treating expert witness regarding such matters as the type of evaluation performed and the goal of the evaluation (p. 13). In this regard, medical associations have begun to establish guidelines for the physician acting as an expert witness in order to help distinguish their role from that of the treating physician. For example the Ontario Medical Association (2007) has written:

There is no question that occasionally the boundary between a treating physician and a retained expert witness becomes blurred. In instances where a physician has provided ongoing care for a patient, a lawyer may request further examination and diagnostic testing as well as an extensive report and an opinion concerning the patient's recovery.

In addition to testimony in court, some of these services could be considered to be those of a retained expert witness. (p. 22)

Regardless of role, as pointed out by Martelli, Zasler, Nicholson, and Heilbronner (2001) "as physicians, we have all pledged to the Hippocratic oath that, first and foremost, we should do no harm" (p. 13). In this manner, Borg, Holm, Peloso, and Cassidy (2004) have additionally noted, "regardless of the source of information, to be useful, a diagnostic test must yield valid information, that is, it must be relatively free of random error (good reliability) and systematic error (free of bias)" (p. 61). Of course, as highlighted by Carroll and Cassidy (2004), "where

symptoms persist, compensation/litigation is a factor” (p 84). It is therefore important that medico-legal assessments be reliable and free of bias to address whether or not factors, such as malingering for secondary gain, are at play. On this point, Martelli, Zasler, Nicholson, and Hart (2001) state:

A diagnosis of mild TBI can have far reaching implications in terms of financial, vocational, treatment and disability status... lawyers and clinicians should understand that the preponderance of evidence to support a working diagnosis of mild TBI rests initially on the subjective history elicited by the examining clinician [but subsequently is supported by objective measures such as] neuropsychological assessment. (p. 2)

A main reason, then, that a medico-legal evaluation includes both a subjective and objective approach, is to minimize a response bias by either the examiner or the examinee (Martelli, Zasler, Nicholson, & Heilbronner, 2001, p. 13).

Response bias was defined by these authors as, “a class of behaviours that reflect less than fully truthful, accurate or valid symptom report and presentation, whether deliberate or unconscious” (p. 13). Heilbronner, Martelli, Nicholson, and Zasler (2002) were careful to highlight that, “one of the potential pitfalls in the neurobehavioural assessment of suspected brain injury is the potential to over diagnose brain injury based solely on a compatible set of patient complaints” (p. 2). In this regard, response bias can be detrimental to the patient, for example, in reinforcing a disability, as well as to the funding source, by having to incur unnecessarily high costs (either through cost to assess or via cost to settle) (Martelli, Zasler, Nicholson, & Heilbronner, 2001).

Grieffenstein and Cohen (2005) offered a view as to the reason for response bias. The authors noted that, when providing a neuropsychological opinion for legal purposes, it is

important to recognize conflicting agendas whereby the practitioner behaves in a partisan manner as advocate—for example, to the plaintiff lawyer in a civil suit—versus providing conclusions that are at least grounded in science and are tightly linked to facts (p. 33). This view was shared by Blau (1984), a forensic psychologist who wrote:

In almost every community there are experts in various health professions who are known as “plaintiff’s experts” or “defence experts.” This may mean that the expert has specialized in some aspect of his or her profession that lends itself uniquely to the goals or tasks pursued by the attorney for the plaintiff or the attorney for the defense. More frequently, such a label suggests that the expert has a bias for one side or the other and is willing to expand subjective opinions to meet the competitive adversary requirements of the attorney who retains the expert. (p. 165)

As noted Zafonte and Martelli (2002), however, “the scope and content of an [Independent Medical Examination] report, if truly objective, would be the same if one were hired by the defence attorney or the plaintiff attorney” (p. 13). Moreover, Martelli, Zasler, Nicholson, and Heilbronner (2001) continued to highlight the need for a multi-modal assessment to help offset the influence that “attorney coaching” has on the manner an examinee presents to the examiner, and, in turn, the influence this has on the opinion rendered by the examiner as to whether or not the examinee sustained a TBI (p. 20).

In summary, the type and length of services provided to individuals who have sustained a TBI, and where they are situated on the continuum of care to receive these services, depends on factors such as: the severity of the injury, the lingering effects of that injury (which in turn, affects an individual’s function), and whether or not the individual is making a compensation claim. For example, the Toronto Acquired Brain Injury Network (2006) described the general

difference between those who sustained a moderate/severe TBI compared to those who have sustained mild TBI. The Toronto ABI Network wrote that:

Those with moderate-to-severe injuries tend to demonstrate a severe and complex range of deficits and generally require more intensive, often life-long supports. Similarly, those with mild brain injury often make a good recovery and can return to many, if not all, aspects of their pre-injury life. (pp. 9-10)

It is now well understood by the health care professionals who work with neurotrauma patients that, regardless of severity, there is a need for an immediate and accurate diagnosis of TBI. The purposes of this is: (1) to prevent further complications stemming from the initial injuries, such as an increase in intracranial pressure, which can lead to severe, permanent injury and even death, if left untreated; and (2) to develop and implement an effective rehabilitation plan, so that optimal recovery can be achieved for all those who sustain a TBI. As identified by Borg et al. (2004):

The diagnostic procedure is critically important in the acute management of patients with traumatic brain injury (TBI). Firstly, it allows the attending clinician to classify the severity of the injury as mild, moderate or severe, which in turn, can determine the prognosis for the patient. Secondly, it guides the application of diagnostic tests to identify intracranial lesions that require immediate management and/or problems of cognitive function that can determine long-term recovery. (p. 61)

The challenge is making sure that accurate assessments and, subsequently, adequate services are provided to the right people, at the right time, and for the right reasons. As suggested by Heilbronner et al. (2002), “when there is marked discrepancy between the person’s claimed distress or disability and the objective findings, when there is a medico-legal context, and when

there are suspicions about motivation, the possibility of exaggeration response bias...should be closely scrutinized” (p. 2).

While the aforementioned literature review has focused on traumatic brain injury in general, there has been relatively little research conducted on claimants who have sustained a traumatic brain injury from a motor vehicle accident (particularly for those who have sustained mild traumatic brain injury). As there are some similar signs and symptoms between Whiplash Associated Disorder (WAD) and mild traumatic brain injury (mild TBI), such as neck pain and headaches, an argument could be made to include the varying degrees of WAD caused by a motor accident so as to enlarge the population within the MVA insurance compensation systems being studied. What follows is a brief review of the literature on Whiplash Associated Disorder (WAD).

#### 2.4.3.1 Consideration of Whiplash Associated Disorder

Cassidy et al. (2000) conducted a study to determine the incidence and prognosis of whiplash injury from a motor vehicle accident based on whether or not a claimant was eligible to receive an award for pain and suffering. The researchers examined claiming behaviours for groups of claimants accessing benefits through the Saskatchewan Government Insurance motor vehicle accident system—a system that offers claimants a choice of accessing benefits via an at-fault system (in which claimants were awarded an amount of money for pain and suffering) or no-fault system (in which an award for pain and suffering was eliminated). The purpose of the study was to investigate the relation between time to claims closure and recovery from whiplash injury for claimants who were eligible to receive an amount for pain and suffering compared to claimants who were not. Their findings demonstrated that the elimination of compensation for

pain and suffering was associated with a decreased incident and improved prognosis of whiplash injury.

In another study, Schmand et al. (1998) sought to investigate the extent of malingering in post-whiplash patients in Amsterdam who were diagnosed as having late onset signs and symptoms, with the majority (67%) having been involved in a car accident. The findings of this study suggested that patients with post-injury whiplash who were seeking compensation through litigation underperformed on a test of memory (i.e. malingering) at a rate that was twice as high as those with post-injury whiplash who were not seeking compensation through litigation. The difference was significant.

Subsequently, Sterner, Toolanen, Gerdle, and Hildingsson (2003) conducted a study on a group of patients in Sweden, all of whom sustained differing degrees of WAD severity from being rear-ended in a motor vehicle accident. The purpose of the study was to understand the prognostic factors for recovery. The findings suggested that gender (being female), having a low educational level, having already sustained a pre-accident neck trauma, and having sustained a post-motor vehicle WAD injury graded as a second or third-degree severity (as compared to a first degree of WAD severity) were factors associated with a longer recovery.

Most recently, Carroll et al. (2008) conducted a critical review of the literature published between 1980 and 2006 to assemble the best evidence on neck pain and its associated disorders for injured workers. The results of this meta-analysis demonstrated that between 60% and 80% of workers with neck pain reported neck pain one year later. Few workplace or physical job demands were identified as being linked to recovery from neck pain. The study noted that workers who had little influence on their own work situation had a slightly poorer prognosis, and white-collar workers had a better prognosis than blue-collar workers. General physical exercise

was associated with better prognosis, while pre-injury neck pain and sick leave were associated with poorer prognosis.

On considering inclusion of WAD in this PhD study (in order to expand the size of the sample being analyzed), I considered the fact that when a health care professional makes a diagnosis of a condition based on the signs and symptoms (as opposed to simply listing the signs and symptoms), they typically diagnose a claimant as having either sustained a WAD or a mild TBI. Based on my professional experience, claimants who have sustained a mild TBI from an MVA are typically vulnerable to being diagnosed as having sustained a WAD by physicians acting on behalf of the insurance adjusters. The suspicion is that an assessment for WAD is requested in an effort to dismiss the more serious injury claim of mild TBI and therefore reduce the amount of potentially eligible accident benefits in a no-fault claim or award of damages in an at-fault claim. Conversely, a WAD can be diagnosed as being a mild TBI by physicians acting on behalf of the plaintiff lawyers as a means of increasing the amount of compensation a claimant could receive via these two types of MVA insurance compensation systems.

All in all, these kinds of efforts at bolstering the position of either the claimant or the insurer tends to undermine the integrity of the research intent. Such practices also diminish the medical and rehabilitation challenges faced by individuals who have sustained a mild TBI, as opposed to a whiplash associated disorder, in terms of legitimacy of the injury and issues related to recovery. For these reasons, and considering that there has been such limited focus to date on TBI and the experience of claimants with different levels of TBI caused by a motor vehicle accident (MVA), I chose to focus this research on the TBI population alone for this study.

## **2.5 Summary and Conclusion**

For the past 80 years, practically every jurisdiction in Canada, the USA, and most of the developed world, has analysed the type of motor vehicle accident (MVA) insurance compensation system they use with a view to implement changes that would result in a more affordable, equitable, and efficient system—one that would balance the cost of insurance premiums for all insured drivers against the cost of compensating claimants who are injured in MVA accidents.

Most of the research, however, has focused on system costs. I was unable to find any study that has empirically measured the extent to which adversarialness within an MVA insurance compensation system affects access to health care benefits. Despite thorough review of the research, I was also unable to uncover any studies that looked at responsiveness, in terms of a claims management process, and how this may affect access to health care benefits for claimants who have sustained a traumatic brain injury (TBI) from an MVA. Additionally of interest to this project, scholars who have studied different types of MVA insurance compensation systems are of the view that a no-fault system is better able to address the rehabilitation needs of a claimant as compared to an at-fault system (because benefits within a no-fault system are provided more promptly for the majority who have sustained injury, regardless of fault). It is important to note that it appears there is no comparative analysis between an at-fault and a no-fault MVA system on the measure of recovery from a TBI.

Even though there have been advances on a variety of fronts to both prevent and reduce the incidence of TBI from a MVA, and improve the recovery and hence the well-being of individuals who have sustained a TBI, motor vehicle accidents still remain a leading cause of

TBI. This persistent situation continues to lead to high costs for families, health care professionals, and insurance companies who provide compensation to claimants from an MVA.

The aim of this study, therefore, is to examine how the design of an MVA insurance system affects access to benefits for claimants who have sustained a traumatic brain injury in a motor vehicle accident, and how this, in turn, affects recovery. The sample included only private passenger, personal injury claims (excluding commercial passenger claims, such as taxis or vehicles used during the course of one's employment). I conducted a comparative analysis, first between an at-fault and no-fault system on measures of adversarialness, cost, responsiveness and recovery, and then between a group of mild and moderate/severe TBI claimants on these aforementioned measures.

## **Chapter Three: Methods**

This chapter describes the research design, defines the main variables in this study, and describes the procedures used to collect, sort, measure, and analyze the data.

### **3.1 Research Design**

The original plan was to compare a pure no-fault MVA insurance compensation system with an at-fault insurance MVA compensation system for claimants with three levels of traumatic brain injury (mild, moderate, and severe) in a 2 x 3 factorial design with measurements on four dependent variables as described below. Unexpectedly, however, a key informant from one of the pure no-fault systems in Canada who had supported this research study changed roles within the company. Therefore, access to data from their no-fault claims files was no longer available. This presented a challenge for the entire study. Fortunately, an approximation of the pure no-fault system seemed available within Alberta's at-fault system—a system which has both a limited no-fault component (Section B – Accident Benefits) in addition to its at-fault (Section A – Liability Insurance Coverage) component. Discussions with key informants at insurance companies participating in the study led to the agreement that the Section B – Accident Benefits portion of Alberta's MVA insurance compensation system (as set out in the Alberta Standard Automobile Policy, SPF 1) could be used as a proxy to a pure no-fault system.

During the initial studies, after an assessment of data in the claims files, it was decided that a mixed-methods approach would be used in the final design. The purpose remained the same: to compare no-fault and at-fault motor vehicle accident (MVA) insurance compensation systems in access to health care goods and services for claimants with traumatic brain injury (TBI). There would be only two levels of TBI severity used in the design—mild and

moderate/severe. The reason for this will be discussed later as it pertains to the refinements made to the design of the study.

Two main comparative analyses were carried out. The first compared at-fault and no-fault MVA insurance compensation systems on four dependent measures: “responsiveness of the system” (responsiveness), “adversarialness of the system” (adversarialness), “cost of the accident benefits/final settlement” (cost) and “degree of claimant recovery” (recovery). A series of Mann-Whitney U tests were applied. To supplement interpretation of results from these comparisons, additional qualitative data was gathered and assessed using non-parametric descriptive statistics as appropriate. A second comparison, using similar nonparametric statistical evaluation techniques, was made of claimants with either mild or moderate/severe TBI on the same dependent variables.

Analyses were made of the total data set, followed by more in-depth analyses of data at four distinct, yet interconnected, phases of the MVA claims management process. This was done to provide a deeper understanding of the key factors thought to influence the dependent variables (and the key players who participate in the claims management process to address these key factors). The four phases were: Accident/Fault Investigation (AF), Medical Rehabilitation (MR), Claims Administration (CA), and Dispute Resolution (DR). Analysing the data, based on the four distinct phases of the claims management process, was necessary given the complexity of an MVA insurance compensation system.

### **3.2 Recruitment of Insurance Companies as Data Sources**

Participants from MVA insurance companies in Alberta were recruited from those listed in the Alberta 2007 Superintendent of Insurance Annual Report (2007 Annual Insurance Report). Key informants, either working in the MVA insurance compensation system or at the University

of Calgary's department of Insurance and Risk Management, provided advice on the companies that best matched the research requirements.

From the 2007 Annual Insurance Report, a total of 53 companies were identified as being of possible interest. The list was immediately narrowed down to 38, as 15 companies did not provide MVA insurance coverage, provided only commercial MVA insurance coverage, or the company indicated they had too few personal injury claims caused by motor vehicle accidents. Of the 38 companies, 26 expressed initial interest via a telephone conversation. I followed up with these contacts with a formal letter of introduction. A copy of this letter of introduction is attached in Appendix B1.

Of the 26 companies contacted, four agreed to participate. In the end, only two participated in the research, as two of the companies opted out of the study. The primary reason given for their decision not to participate was due to a change in personnel and limited human resources that could be devoted to either assisting me in my research identifying claims files for this study or providing the supervision necessary to maintain issues pertaining to confidentiality of claimant information. Thus, the recruitment process yielded two insurance companies in the Alberta MVA insurance compensation system that agreed to participate in the research study. They were coded as Insurer Provider 1 and Insurer Provider 2.

According to Alberta's Superintendent Report (2007), Insurer Provider 1 and Insurer Provider 2 had a combined market share of automobile insurance sold in Canada of eight percent. This combined average placed them in the top three of all insurance companies that sold automobile insurance in Alberta for the year 2007. These companies were considered to be similar to other insurance companies in managing their motor vehicle accident claims for two main reasons. First, as the automobile insurance industry in Canada is highly regulated at both

the federal and provincial levels of government, all insurance companies must conform to a standard set of practices or risk facing penalties. Second, in Alberta, automobile insurance is a highly competitive market where most consumers are free to purchase their auto insurance from any insurance company they choose. This market pressure also tends to ensure that insurance companies adhere to similar insurance practices. Thus, Insurer Provider 1 and Insurer Provider 2 were considered to be representative of insurance companies in Alberta that sold private passenger motor vehicle accident insurance.

Both Insurer Provider 1 and Insurer Provider 2 agreed to grant the researcher direct access to key informants in the claims department, all of whom had direct knowledge of the claims files being reviewed. There were five key informants from Insurer Provider 1 and six key informants from Insurer Provider 2. The key informants for Insurer Provider 1 were as follows: The first was the Internal Rehabilitation Consultant who provided either case management or an opinion on matters related to the medical/rehabilitation (MR) phase of the claims management process and had participated in all of the at-fault claims files and in some of the no-fault claims files. This key informant had a strong working knowledge of the MR issues on the majority of the claims files. The second was a Senior Claims Supervisor who had also participated in all of the at-fault claims files, as well as a few of the no-fault claims files that required supervisory assistance. As such, the second key informant had a strong working knowledge of the claims files. In addition, this key informant had a strong understanding of all aspects of the claims management process. The third was the Vice President of Claims, who, like the Senior Claims Supervisor, also had a strong working knowledge of the claims files and of the claims management process. Additionally, this key informant had strong business acumen related to relevant insurance matters. The fourth and fifth key informants were both Senior Claims

Adjusters—one for the at-fault claims files and the other for no-fault claims files. Both of these key informants had a strong working knowledge of the respective at-fault and no-fault claims files.

Insurer provider 2 also had similar key informants. There was a Senior Claims Supervisor whose key role was the same as the Senior Claims Supervisor for Insurer Provider 1. The second, third, and fourth key informants were all Senior Claims Insurance Adjusters for the at-fault claims files and had a strong working knowledge of the at-fault claims in which each participated. The fifth key informant was a Senior Claims Adjuster for the no-fault claims files. Finally, the sixth key informant was the Director of Claims, whose key role was similar to the Vice President of Insurer Provider 1.

### **3.3 Initial Studies**

Before undertaking the main study, a number of questions had to be satisfied. To address these, I conducted first one, and then a second, small study. The main questions I addressed in these two smaller studies were: (1) Do MVA claims files contain data essential to address the research questions posed in this study, and can such data be captured on the data collection displays,<sup>19</sup> drafted for that purpose, in a way that readily lends itself to analysis? (2) Is there sufficient data to allow for a meaningful comparison between both the no-fault and at-fault systems, as well as between the three levels of TBI severity (mild, moderate, and severe)? (3) Is there sufficient no-fault data in the claimants' at-fault claims files to assess their no-fault claims,<sup>20</sup> or will the researcher need to review both no-fault claims and at-fault claims files

---

<sup>19</sup> Data displays were used to view variables across each of the claims files.

<sup>20</sup> In a third-party (at-fault) law suit of this nature a plaintiff lawyer can request a copy of a claimant's no-fault claim to be used as part of the at-fault claim. If so, the documents of their no-fault claim are contained in the at-fault claim.

separately? (4) Does data in the MVA claimant files lend itself to assessment on the outcome measurement scales as developed (i.e. adversarialness, cost, responsiveness, and recovery)?

In the first small study, four at-fault claims files provided by Insurer Provider 1 were reviewed. Before examining these files, Insurer Provider 1 obtained consent from the four former claimants to allow disclosure of information to me. I reviewed the files at one of the offices of Insurer Provider 1 under the supervision of a senior claims adjuster in order to satisfy issues of confidentiality of data contained within the claims files. These procedures, and others, which were used to ensure anonymity and confidentiality, are described in the section on ethics.

Overall, the information from these files indicated there was adequate data for study purposes, pertaining to the data being collected and analysed for the at-fault claims files. In general, the data collection and recording techniques used to review the at-fault claims files proved to be reliable, and with refinements, could be used in the main study. The refinements made are described in greater detail in subsequent sections. It did become evident, however, that these at-fault claims files would not provide sufficient and reliable data for the no-fault component. While there were sufficient quantitative and qualitative data to address the research question pertaining to the at-fault system, data in the claims files pertaining to the no-fault aspects of the claims were not consistent across all at-fault claims files. In order to conduct a comprehensive review of no-fault claims, it appeared that a second set of claims files would need to be examined, in particular those that exclusively pertained to no-fault claims (Section B – Accident Benefits portion of Alberta's MVA insurance compensation system).

Three such no-fault claims files, from Insurer Provider 2, were then examined, and these formed the second small study. Similar procedures to the ones used for Insurer Provider 1 were implemented with Insurer Provided 2 to ensure that proper disclosure of the content of these

claims files to a third party (myself—the researcher) was used and that claimants' anonymity and matters of confidentiality were also being maintained. These procedures are described in more detail in the section on ethical considerations. The review of these claims files indicated there indeed was sufficient data within the no-fault claims files and that the data could be consistently extracted. From this basis, the necessary refinements were made to the processes and procedures to ensure a valid comparison could be drawn between the two types of MVA insurance compensation systems and between the TBI severity groups. These refinements are discussed in more detail in the remaining sections of this chapter.

### **3.4 Design Refinements**

Several refinements were made to the main constructs underlying this study and how they were conceived and defined. Specifically, there were refinements to the: No-fault MVA insurance compensation system type; definition of TBI severity levels; qualitative aspect of the design; and four phases of the claims management process.

#### ***3.4.1 Refinement to No-Fault MVA Insurance Compensation System Type***

Data from the Section B – Accident Benefits of Alberta's Standard Automobile Policy SPF 1 (Standard Automobile Policy), known as add-on benefits in this type of system, replaced the accident benefits data that was initially going to be used in this study. In a pure no-fault system, this type of data is referred to as Personal Insurance Protection (PIP) benefits. While the general concept of no-fault is the same, regardless of whether they are add-on benefits or PIP benefits, the main differences in the provisioning of these benefits lay in the amount of funding that is available and the time limit in which these benefits are provided.

Generally speaking, Alberta's Standard Automobile Policy no-fault portion of its coverage (Section B) allows for all reasonable and necessary medical/rehabilitation expenses that

are incurred. The limits for this coverage are that the costs be incurred within a two year period from the date of the accident or up to a maximum dollar limit,<sup>21</sup> regardless of whether a claimant would continue to benefit from ongoing treatment/care for the injuries sustained in the MVA. The regulations<sup>22</sup> also allow for an insurance adjuster to request an independent medical assessment to determine ongoing eligibility for benefits. There are specific provisions for death and funeral expenses, and for disability (income replacement) benefits, but no provision allowed for a lump sum indemnity for permanent impairment or pain and suffering. A claimant does have the right to sue the third party liable for the accident for pain and suffering and for economic loss. By statute, the amount of accident benefits received from their no-fault claim can be deducted from the settlement amount for their third-party (at-fault) claim.

In contrast, and generally speaking, PIP benefits within a pure no-fault system allow for coverage for all reasonable and necessary medical/rehabilitation expenses that contribute to recovery and rehabilitation, but there is no specified time limit or maximum allowable monetary amount to the coverage. In order to qualify for ongoing benefits, the claimant must continue to demonstrate measurable improvement from the treatment. Similar to Alberta's no-fault section of their system (Section B), an insurance adjuster<sup>23</sup> who administers personal injury protection coverage within a pure no-fault system has the right to request an independent medical examination to determine ongoing eligibility for coverage. Personal insurance protection (PIP) coverage in a pure no-fault system can also provide a lump sum indemnity amount for permanent impairment, to a maximum allowable monetary amount. Typically, when coverage of this nature

---

<sup>21</sup> For accidents that occurred prior to September 30, 2004, this limit was \$10,000. The maximum limit changed to \$50,000 for accidents that occurred on or after October 1, 2004.

<sup>22</sup> Refer to the Stevenson (2007) for a consolidated version of Alberta Insurance Statutes and Regulations

<sup>23</sup> An insurance adjuster is sometimes referred to in a PIP program as a case manager.

is provided as part of the accident benefits plan, a claimant has no right to sue the third party, who was liable for the accident, for pain and suffering or for economic loss.

### ***3.4.2 Refinements to Defining Traumatic Brain Injury Severity Levels***

Two refinements were made to the definition of traumatic brain injury (TBI) severity levels. First, the TBI injury severity was determined using a combination of a quantitative measure (Glasgow Coma Scale score)<sup>24</sup> and qualitative measure (using descriptors, such as concussion, or symptoms, such as headaches). This was needed because use of the term mild TBI was not consistent among the health care professionals (HCPs) who were assessing or treating a claimant. For example, if a claimant had been treated at the scene of the accident by an emergency medical technician, and there was suspected loss of consciousness, then a Glasgow Coma Scale (GCS) was recorded on the Ambulance Call report. If a claimant attended a medical facility sometime after the accident complaining about symptoms consistent with mild TBI, for which no previous GCS had been measured and recorded, then the diagnosis tended to include terms such as “concussion” or “concussive syndrome” and symptoms such as “headaches” and “dizziness.” Claims files that had a diagnosis of WAD, based on neurological signs and symptoms of headaches, dizziness, etc., were not included in the sample unless there was a differential diagnosis made by at least one physician that the claimant had sustained a TBI.

The second refinement made was to combine the moderate and severe TBI levels into one group. While the GCS was consistently used to describe claimants who had sustained moderate or severe TBI, from a claims management perspective, a claim in which the injury resulted in a

---

<sup>24</sup> GCS is a universally used measure of TBI severity. A GCS score of 13 to 15 indicates a mild TBI. A GCS score of 12 to 9 on 15 indicates a moderate TBI and a GCS score of 3 to 8 on 15 indicates a severe TBI note. Note that a GCS score is modified to a score out of 10 when an individual has been intubated (meaning that a tube has been inserted in their mouth and throat) because 5 points must be removed that pertain to a verbal response. Note there is also a pediatric GCS score and this is based on an infant’s non-verbal behaviour.

moderate TBI, as defined by a GCS score, was often managed in the same fashion as those claims in which the claimant had sustained a severe TBI. So, instead of the research design having three levels of TBI (mild, moderate, and severe) as originally proposed, the moderate and severe levels were combined, in one group (moderate/severe TBI severity group).

### ***3.4.3 Refinement to the Qualitative Data Sources***

The original design had included collection of qualitative narrative data from key stakeholders representing the injured individual/family, insurance provider, legal and health care systems, and government, all of whom would have good knowledge about the kinds of issues that influence access to health care benefits within each system. Their perspectives were to be used to help explain the results of the quantitative analysis from the first part. After the initial study of the four at-fault claims was completed, though, it was decided that interviewing key stakeholders could be eliminated from the main study. Instead, the main study would involve conducting in-depth claims files reviews on all claims files from which a rich source of qualitative data would be gathered. This decision eliminated the need to conduct the interviews as initially planned.

The main design of the study became more focused on quantitative analysis, using a combination of nonparametric statistics and linear regression to compare the difference between the no-fault and at-fault systems and between the mild and moderate/severe TBI severity groups on the dependent measures. This framework could be achieved because the terminology used by the key players involved in an MVA claims management process to communicate information was standard “insurance and medical/rehabilitation industry speak”. As an example, this first quote pertains to liability in excess of an insured driver’s policy limit. The following is an exact quote taken from an at-fault claims file (with the name of the insured driver eliminated): “The

Estate of [insured driver] is potentially liable in this case for any judgement or settlement that exceeds \$1,000,000.” Therefore, on this claims file, the insured driver’s policy limit was an issue. A second example bears on the contributory negligence of the claimant. Again, this is an exact quote taken from an at-fault claims file: “It does not appear that we have the necessary proof to establish contributory negligence for failure to use a seatbelt.” In this case, the claimant’s contributory negligence was an issue. Therefore, as evident from these examples, there was little need for an in-depth qualitative interpretation to identify themes common to the claims files (as one would be required to conduct in a qualitative study using interviews). Note though, that there still remained a qualitative component to the analysis that essentially involved drawing examples from case files to illustrate the statistical findings.

#### ***3.4.4 Refinement in Conceptualizing the Claims Management Process***

As a result of the initial studies, minor refinements were also made to the conceptualization of two of the phases of the claims management process. The legal concept of “fault” (through negligence) was added to the accident investigation phase, creating the accident/fault investigation terms used to describe this phase. This was a necessary refinement because the concept of fault due to negligence was an integral part of investigating a motor vehicle accident. As well, the legal/judicial phase was defined as the “dispute resolution” phase, which has at its core the use (or intended use) of a formal dispute resolution procedure (such as a court proceeding). It was therefore necessary to distinguish the use of a formal dispute resolution process from the legal component that could be used in the claims administration phase (such as a defence lawyer stepping in to help negotiate a settlement between a claimant

and an insurance adjuster). The four phases of the MVA claims management process were redefined as:

1. The accident/fault investigation (AF) phase in which the occurrence of the accident and the factors that caused the accident and severity of the injuries are investigated;
2. The medical/rehabilitation (MR) phase in which the injured party is assessed and treated;
3. The claims administration (CA) phase in which a claimant's eligibility for benefits is determined, payments are made, issues in dispute are negotiated and settlements are made; and
4. The dispute resolution (DR) phase in which unresolved issues are formally disputed as part of a court proceeding (even though the parties on each side of a claim continue to negotiate a settlement). This phase is indicative of an intervening party participating in the resolution of a dispute, such as a mediator, arbitrator or judge.

### **3.5 Selection of Sample Population**

The four at-fault claims files from Insurer Provider 1, reviewed as part of the initial studies, were identified based on the recollection of the Senior Claims Adjusters as most insurance companies do not classify claims files by injury type. The Internal Rehabilitation Specialist acted as the key contact between me and Insurer Provider 1 for both the initial studies and the main study. Both closed claims (settled claims) and open claims (active claims) involving traumatic brain injury (TBI) cases were identified. The four claims files chosen for the initial studies were all closed.

In the main study, the same claims file selection procedure was used for both Insurer Provider 1 and Insurer Provider 2. Each insurance company assigned a key informant internal to their insurance company to oversee the file selection process and interface between company

personnel and the researcher. This was in keeping with procedures for maintaining confidentiality as set out in the contract between the insurance companies and the researcher. A sample of the Confidentiality Agreement is found in Appendix B2.

I obtained a total of 62 claim files from the two insurance providers. Twenty came from Insurer Provider 1, including the four claims files used in the first small study, and 42 came from Insurer Provider 2, including the three claims files used in the second small study. Five of the 62 claims files were eventually eliminated from the study, one from Insurer Provider 1 and four from Insurer Provider 2. Two claims files were eliminated because they had no documentation that demonstrated the claimant had sustained a TBI, two did not have medical/rehabilitation (MR) data from which essential information needed to be extracted, and one that was still open at the time the study was closed to data collection and therefore a comprehensive file review could not be performed.<sup>25</sup>

The broad characteristics of the remaining 57 claims files meeting research criteria obtained from the two insurance providers,<sup>26</sup> by claim type and TBI severity, are summarized in Table 3-1.

**Table 3-1 Claims Files by Insurance Provider**

Insurer Provider	Claims File Type		TBI Severity	
	At-Fault	No-Fault	Mild	Moderate/ Severe
1	7	13	7	13

<sup>25</sup> Open claims files were included in the sample population only if time to closure was imminent so that a comprehensive file review could be completed.

<sup>26</sup> Insurer Provider 2 allowed access to the computer-generated notes for their files as this was a primary means of communication for adjusters, claims managers, and insurance examiners. A Senior Claims Adjuster provided basic training to allow me to access this information. Insurer Provider 1 did not allow the researcher access to their computer information, as the majority of the computer notes were copied to the file.

Insurer Provider	Claims File Type		TBI Severity	
	At-Fault	No-Fault	Mild	Moderate/ Severe
2	28	9	17	20
Total	35	22	24	33

Of these 57 claims files, eight claimants had both at-fault and no-fault claims files. I was able to treat these eight files as separate claims for two main reasons. First, the insurance companies managed these at-fault and no-fault claims separately; while each of these claims files were open and being actively managed, the at-fault claims were being managed by an at-fault insurance adjuster, and a different no-fault insurance adjuster managed the no-fault claims. Second, based on the Chinese Wall legal doctrine,<sup>27</sup> none of the information, nor how each of the claims files were being managed, was disclosed between the no-fault and at-fault insurance adjuster. Finally, even though a claimant's no-fault claims information (or parts of a no-fault claims file) was eventually disclosed to the at-fault adjuster, following the closure of the no-fault claims, the only bearing this had on the at-fault claim was an adjustment to the final settlement amount (the total less the amount of money accessed by a no-fault claim). Therefore, I was able to consider and treat a claimant's no-fault and at-fault claims as separate claims. Note though, that the no-fault claims information contained in an at-fault claims file was used in the data collection for that at-fault claim.

---

<sup>27</sup> According to the Dictionary of Canadian Law, 2nd Edition (1995), a Chinese Wall means, "the establishment within an organization of informational barriers to prevent the improper transmission of information within the organization concerning material fact or material change that has not been generally disclosed" (p.183).

### **3.6 Ethical Considerations**

Prior to conducting both the initial and main studies, ethics approval was sought from and granted by the University of Calgary's Conjoint Health Research Ethics Board (CHREB). As part of obtaining ethics approval, rules internal to participating insurance companies were developed to govern access to privileged information from the claims files. These rules established whether or not claimant consent might be required, how to maintain anonymity of claimants' personal information and other key players' personal identity, and procedures for establishing and maintaining confidentiality.

#### ***3.6.1 Consent of Claimants for Access to Data***

Before beginning the initial studies, consent was obtained from the four claimants whose claims files were reviewed. Insurer Provider 1 obtained this consent directly. Please refer to Appendix B3 for a copy of the letter sent to the claimants, requesting their approval to participate. All four claimants approved. Disclosure of the claims files was then made between the insurance company and me. I then reviewed the files at one of the offices of Insurer Provider 1. A senior claims advisor was appointed to oversee my researcher work.

The procedure developed with Insurer Provider 2, at their suggestion, involved the preparation of a contract between me, as researcher, and the insurance company. This contract effectively stated that I would act in the same manner as an employee of the insurance company who had access to claims files. Thus, confidentiality of all data gathered was achieved by theoretically granting me employee status, requiring me to conduct the review of the claims files as would any employee who had access to this type of information. In turn, no direct consent was required of either the at-fault or no-fault claimants to review their claims data. After signing

the contract with Insurer Provider 2, a similar contract between myself and Insurer Provider 1 was recommended, created, and signed.

The procedure used in the initial two small studies to ensure that data sources were appropriately and ethically accessed was followed in the main study for both insurance providers. No additional at-fault claims were obtained for the main study from Insurer Provider 1 and Insurer provider 1 stated that no direct consent was needed to disclose data from their no-fault claims files, as these pertained to first-party claimants. The procedures used to obtain consent to disclose claimant information, for both the initial and main studies, were communicated to and approved by CHREB.

### ***3.6.2 Maintaining Anonymity and Confidentiality***

Ensuring anonymity was straight-forward, since the research questions addressed did not require linking the data gathered and analyzed to any particular claimant or other key players. The purpose was to ensure that the data collected during the initial studies and main study could not be traced back to a key player or an insurance company. The manner in which anonymity and confidentiality of the key players and the insurance corporations would be maintained was also communicated to and approved by CHREB.

First, a unique research reference number (research ID) for each claims file was created. Table 3-2 shows the sections of a research ID number the researcher developed.

**Table 3-2 Research ID Number Format**

<b>Section 1: Claim Type</b>	<b>Section 2: Claimants' liability</b>	<b>Section 3: Claims File #</b>	<b>Section 4: Claimant #</b>	<b>Section 5: Insurance #</b>
A = At-fault;	F = Liable;	001, 002, 003....	01, 02, 03...	01 = Insurer Provider 1 or 02 = Insurer Provider 2

<b>Section 1: Claim Type</b>	<b>Section 2: Claimants' liability</b>	<b>Section 3: Claims File #</b>	<b>Section 4: Claimant #</b>	<b>Section 5: Insurance #</b>
B = No-fault	N = Not liable	001, 002, 003....	01, 02, 03...	01 or 02

For example, the first at-fault claims file from Insurer Provider 1 was coded as research ID#: AN-001-01-01, denoting that it was A for at-fault, N for not liable, 001 for the claims file #, 01 for the claimant number, and 01 for Insurer Provider 1. An example of a no-fault claims files from Insurer Provider 2 was coded as research ID#: BN-001-01-02, denoting that it was B for no-fault, N for not liable, 001 for the claims file #, 01 for the claimant number, and 02 for Insurer Provider 2. Second, to ensure that personal and health information for each of the claimants who participated in the study remained anonymous, no identifying data on any of the claimants was recorded from the claims files.

To ensure confidentiality, each of the data spreadsheets (displays) used to collect data contained no personal or health information that could be linked back to any individual (key player) or insurance company. To ensure this, a unique research ID was also created for all the key players for which data was recorded. For example, when inputting data into the displays from claims file documents, such as correspondence from a lawyer, the lawyer's name was coded as LAW-P (the P denoted plaintiff). If the correspondence was from a claimant's family member, the name was coded as FAM-M (the second M denoted mother). Each key player also had a reference number assigned beginning from 01. So, for example, the first plaintiff lawyer's name that was recorded was coded as LAWP-01, the second plaintiff lawyer's name was recorded as LAWP-02, and so on. The development and use of displays are described in more detail under section 3.7 of this chapter.

All data that was recorded on to the spreadsheets (displays) were maintained on my computer and an external back up device. All devices were password protected and kept under lock when not in use. The only data made public is that included in the dissertation and the summary of findings provided to the participating insurance companies. No identifying data on any individual or insurance company was made public. Generally speaking, group totals, averages, ranks, etc., were used. If other presentations or publications are made in the future, the procedures set out to maintain confidentiality and anonymity will be maintained. Data was not destroyed as further research is anticipated.

### **3.7 Instrumentation**

Two types of instrumentation were developed for this research. First, protocols for collecting and organizing data were developed. Second, in the absence of a uniform means of measuring the dependent variables, systematic ways of scaling each were prepared and tested.

#### ***3.7.1 Displays***

Prior to the initial studies, a set of displays<sup>28</sup> for both quantitative and qualitative data collection and analysis was developed. As defined by Miles and Huberman (1994) a display is a visual format that presents information systematically (p. 91). The purpose of the displays was to provide a means of gathering and organizing the data from which comparative analyses could be made. Utilization of such displays was the most pragmatic way of data gathering and organization, given the voluminous and complex nature of the claims files. Minor refinements were made to the displays for the main study. The modifications made to these are presented in Table 3-3.

---

<sup>28</sup> The format of the displays was developed based on the techniques as outlined in Miles and Huberman (1994).

**Table 3-3 Modifications to Displays for Main Study**

Displays	Purpose	Modifications for Main Study
Accident Benefits Type and Cost	To provide a record of the health care goods and services and related costs for benefits a claimant accessed	Clusters of benefit types were eliminated. Individually itemized benefits and cost paid out in the no-fault claims were recorded as they appeared in the claims file documents
At-fault Claimant Insurance and No-Fault Claimant Insurance	To provide a record of data specific to administrative aspects of each of the claims files	No modifications made
Claimant Demographic	To provide a record demographic information of claimant	Eliminated variables of ethnicity, citizenship, and English as a second language
Claims Management Process	To capture detailed qualitative data specific to the key aspects of a claims file	Merged with Continuum of Care process (C of C) and renamed Claims Management by C of C
Continuum of Care Process	See above	Eliminated and merged with Claims Management Process display
Document Type	To provide a record of document titles contained within each claims file	No modifications made
File Inquiry	To provide a record of researcher's notes and queries for each claims file	No modifications made
Follow-Up Log	To provide a means of ensuring all essential data within each claims files had been captured	No modifications made
General Inquiry	To provide a record of researcher's notes and queries specific to each insurer provider	No modifications made
Insurance File Code	To provide a record of insurance policy information for claims files – one for each insurer provider	No modifications made
Master Document Type	To provide a list of the titles of the generic document types in each claims file.	No modifications made
Potential Key Factors/Key Players	To provide a record of potential key factors and key players that emerged from review of documents	No modifications made
Settlement Cost	To provide a record of the proposed and final settlements in the at-fault claims (including breakdown of the awards of damages in their specific categories, such as generals and specials, and the lawyers' bills of cost when available – when available)	Added as a display Used to itemize awards of damages, lawyers bills of costs, and final costs

An example of each type of display is provided in Appendix B4.1 to B4.11 to demonstrate the type of data that was captured in each display. Note that some of the data has been omitted or changed to ensure claimant and insurer provider confidentiality.

### ***3.7.2 Dependent Variable Measurement Scales***

Three Likert-type scales were initially developed to measure the dependent variables of adversarialness, responsiveness, and recovery. Cost was measured in terms of cumulative dollar value. As part of the initial studies, the Likert-type scales were tested to determine whether each was a valid measure for the constructs, and whether each could be reliably measured. When practically applied, however, it quickly became apparent that refinements were needed. The four dependent variables are first described as they were originally conceived, and then laid out in their refined versions used in the main study.

#### **3.7.2.1 Adversarialness Scale**

Adversarialness was originally defined as the degree of opposition or dispute to the accident benefits being requested and was to be measured by the steps taken in a dispute resolution (DR) process that governs the no-fault and at-fault MVA insurance compensation systems. Generally, the clusters of itemized health care benefits, as I originally conceived, were not found to be useful for comparing the difference between the two types of systems on the measure of adversarialness (as health care benefits were not consistently itemized in the at-fault claims files). As well, the variability of a score based on the dispute of a benefit was very limited.

Additionally, from review of the claims files in the initial studies, I noted that the concept of adversarialness was related to a variety of other factors that appeared to be of importance in the claims management process, beyond simply a dispute for benefits. For example, adversarialness was affected when an insurance adjuster, after repeatedly requesting a plaintiff lawyer to disclose a claimant's health care records, had to threaten that plaintiff lawyer with legal

action to compel its disclosure. Therefore, as part of the main study, a revised scale was generated as a set of indicators that were used to measure adversarialness.

The adversarialness scale that was used in the main study was a 100-point scale of 10 criteria, composed of equally weighted questions deemed to influence adversarialness (defined as the degree of opposition in a dispute). Given that the concept of adversarialness was new to this research, inter-rater reliability for scoring adversarialness needed to be established. Appendix B5 outlines the instructions and statistics used to obtain inter-rater reliability for this measurement tool.<sup>29</sup> The data on the claims management by the continuum of care (C of C) display was reviewed, from which the criteria were identified. A score of 10 points was assigned to each question answered with a “yes,” and a score of zero points was assigned to each question answered with a “no.” The scores were totalled, and that total was used to measure adversarialness for each claims files. See Appendix B6.1 for the criteria used to measure adversarialness. Appendix B6.2 provides a sample of the instructions given to the raters to score adversarialness.

### 3.7.2.2 Cost Scale

Cost was originally defined as the amount in Canadian dollars paid out on each claim for health care benefits. However, the specific amount of money per itemized benefit that was paid out was difficult to consistently ascertain in the at-fault claims. Also, the discrete increments on the cost scale were not useful, given that the final settlement cost, referred to as a lump sum settlement, was more frequently identified in the at-fault claims files than were the individual awards of damages. What was consistent for both claims types was that total payouts as a ratio

---

<sup>29</sup> Instructions for scoring Responsiveness are also included in this aspect of the appendix.

to total available insurance limits were higher for those claimants who had accessed health care services, regardless of the funding source. There appeared to be a relationship between the settlement cost of a claim and the amount of health care benefits used by a claimant as part of their care. Larger payouts tended to correlate with more benefits used. Also, the more severe the injury the more a claimant accessed health care benefits. Thus, larger payouts tended to correlate with a greater degree of injury severity. Because injury severity was observed to be a key factor that influenced cost, it was necessary to capture this as it pertained to cost. The challenge was that the insurance policy limits were different between both the at-fault and no-fault systems and within each of these two types of systems<sup>30</sup> (none of which was correlated to a claimant's injury severity).

In the at-fault system, the nominal value was the final settlement value. The settlement values ranged from a few thousand dollars to the largest settlement of \$2,000,000.00.<sup>31</sup> In the no-fault system, the nominal value was either \$10,000 or \$50,000. In relation to the at-fault system, the extreme difference in the maximum nominal cost between the two MVA insurance compensation systems made the nominal cost in the no fault system trivial. This rendered a comparative analysis of nominal cost between the two systems essentially irrelevant. As well, in the no-fault system when the legislation changed and the increase in the policy limit went from \$10,000 to \$50,000,<sup>32</sup> claimants with more severe TBI injury took advantage of the increase and

---

<sup>30</sup> Policy limits in the at-fault claims were either \$200,000; \$500,000 or \$1,000,000. The mode was \$1,000,000. The policy limits for no-fault claims prior to October 1, 2004 were \$10,000 and this was standard to all no-fault claims. On or after October 1, 2004 the policy limit was increased to \$50,000 for each claimant.

<sup>31</sup> The policy limit on this claim was on \$1,000,000, but the judgment in court was for \$2,000,000.

<sup>32</sup> Sample size was also an issue in that grouping the claimants according to the change in policy limit and then measuring cost between the groups would have eliminated the option of applying a two-group statistical analysis to compare the between group differences (for both the claim types and injury severity levels). Having enough

most claimants with severe TBI maximized the available limits. In these claims, using a nominal cost would not have captured a proper picture. Essentially, for a severe TBI claimant with the \$10,000 limit, it would look as if few benefits were accessed, compared to a case where the limit was \$50,000 and a substantial amount of benefits was accessed.

As such, in order to compare the differences between the two types of MVA insurance compensation systems on the measure of cost, a ratio of the total payouts of a claim to the total available insurance policy limits of that claim was used. For example, if the settlement amount on a claims file was \$50,000 and the policy limit for that claim was \$1,000,000, then the cost ratio for that claim was 0.05 or 5%. The cost to administrate a file, such as defence legal fees, cost for engineering reports, or external adjuster fees were not included in the total cost. A plaintiff lawyer's cost, as outlined in the Bill of Cost<sup>33</sup> was also not included in the total amount paid out to a claimant.<sup>34</sup> Each of these aforementioned administrative costs were, for the most part, consistently recorded in the claims files, and usually in detail. An accurate account of these costs then could be made and then deducted from the amounts directly paid out to a claimant. I could not accurately account, however, for the amount of money a plaintiff lawyer received from a claimant's final settlement, as payment for his/her service was not identified in the claims files. Therefore, the total cost did not factor out a plaintiff lawyer's contingency fee.

Finally, and as it pertains to health care professionals' fees, if an internal rehabilitation specialist (defined in the main study as a case manager) provided a direct service to a claimant to

---

statistical power was already a limitation of this study. It would become even more problematic by doing a multilevel statistical analysis.

<sup>33</sup> Bill of cost was the amount a plaintiff lawyer's disbursement costs. It did not include a lawyer's contingency fee.

<sup>34</sup> While the Bills of Cost were not considered to be true administrative fee in the sense that these costs were borne by the insured driver, and which were paid out as part of the insured driver's policy limit amount (that is, the cost was not born by the insurance company), they were not included in the payout to the claimant as this portion did not go to the claimant. Instead it went to the plaintiff lawyer (or lawyers) as part of their disbursement fees for service.

manage the coordination of care, this total was included (as it was deemed to be a health care service used by that claimant). This approach also applied to any health care professional (HCP), whose fees for assessment or treatment, as outlined in a treatment plan, was included, and for which this amount was included as an accident benefits expense. If an HCP provided an opinion via an independent medical examination (IME), or if a case manager provided an opinion to an insurance adjuster that was akin to an IME, this type of service was then not included in the total, as it was deemed to be a cost to administrate a claims file—a cost which was borne by the insurance company and not by an insured driver as part of his or her insurance policy limit amount.

Therefore, cost was defined as a percentage of the final settlement to the total available policy limit for a claim, minus administrative fees for services such as legal, engineering or independent medical assessments. Services that were deemed to be part of a claimant's treatment were included in the cost. The plaintiff lawyers' fees for service were not deducted from the settlement cost as these amounts could not be accurately ascertained.

### 3.7.2.3 Responsiveness Scale

Responsiveness was originally defined as the time interval between the date a benefit was requested and the date the insurer responded to that request. I faced the same challenge in measuring responsiveness to a request for benefits (similar to the challenges in measuring adversarialness and cost) because the type of benefit could not be reliably itemized. Therefore, the original scale used to measure responsiveness was also not dependable. As well, defining responsiveness based only on a request for benefits was too narrow a measurement. This was because requesting a benefit was only a fraction of the type of items being requested by the key players throughout the claims management process. Therefore, responsiveness was redefined for

the main study, as the time interval between the date a “request type” for an item (such as information) was made, and the date the insurer responded to that request type. Given that this concept of responsiveness was new to this research, inter-rater reliability needed to be established. Appendix B7.1 outlines the process that I used to obtain inter-rate reliability for this measurement tool.

All request types on each claims file were identified by reviewing the C of C display, as outlined in the Instructions for Scoring Responsiveness. A sample of the Instructions for Scoring Responsiveness is found in appendix B7.2. The time to respond for each request type was calculated and expressed in calendar days. A default score of 547 days was used for requests that had no response. The default score was determined because it kept the request in the rank of requested types within a reasonable limit and its place of rank was reflective of its responsiveness rate (compared to the groups’ average rates of responsiveness). All scores were totalled and an average was calculated for each claims file.

#### **3.7.2.4 Recovery Scale**

Recovery was originally defined as the degree to which a claimant was functionally capable of returning to performing regular daily tasks (work, school, and community life), based on pre-accident status and the amount of modifications required to return to that status, as determined by the treating health care professional (HCP). From the documentation reviewed in the claims files, this measurement scale was also difficult to use, as other than a “yes/no” ability to return work (or school, homemaking, etc.), there was little documentation on any claims file that detailed a claimant’s treating HCPs description of their recovery in terms of degrees of functional capacity. As well, other key players, besides a treating HCP, such as an HCP conducting an independent medical assessment, were able to determine if a claimant could or

could not return to work. Other sources, such as a private investigator or anonymous witness, provided additional information that a claimant had returned to work—information not refuted by the claimant when questioned by an insurance adjuster as to their return to work status.

Therefore, recovery was redefined by a yes/no answer as to whether the claimant could return to work. This answer could be reliably ascertained using a variety of sources. Recovery, therefore, was calculated as the difference between the time it took a claimant to return to work (RTW)/instrumental activities of daily living from the date of the MVA (measured in calendar days). The RTW date was either the actual RTW date as cited in a document or, if no specific RTW date was cited but a document had identified that a claimant had returned to work, an approximate RTW date was determined using the date of the next chronicled document. Using the next chronicled document's date accommodated those claims files where a RTW was cited in a hand-written note and for those where no date was provided.

For a claimant who had not returned to work by the date the claim closed, a score of 732 days was given. All of the 47 claimants who had returned to work had done so within 731 days. As such, a score of 732 days (approximately 18 months) would place the claims files, for which a claimant had not returned to work, in the last rank. This was suitable as a means to rank recovery because those who were ranked last had the poorest rate of recovery.

### **3.8 Data Sources in Claims Files**

This section provides an overview of the documents reviewed within a claims file. Please see Appendices B8.1 to B8.5 for a complete list of all documents that could be contained in an MVA claims file. These documents were categorised by each of the phases of the claims management process for research purposes.

### ***3.8.1 Documents Pertaining to Accident/Fault Investigation Phase***

Documents pertaining to the Accident/Fault Investigation (AF) phase included a police collision report, a witness statement report, and a supplemental or a continuing investigation report. Engineering reports were also reviewed. These types of reports provided a detailed analysis of the factors that these experts thought had contributed to or caused an accident. Correspondences between key players were also part of the documentation reviewed and from which essential data was gleaned.

### ***3.8.2 Documents Pertaining to Medical/Rehabilitation Phase***

Documents that were reviewed as part of the medical/rehabilitation (MR) phase of claims management process included health records compiled as part of a claimant's hospital-based inpatient stay, radiological reports, ambulance attendant call reports, emergency room (ER) health records, rehabilitation reports, and hand written<sup>35</sup> clinical progress notes from each of the treating health care professionals. Community-based health care documentation was also reviewed (examples include a brain injury rehabilitation report, family physician and/or dental health records, and various other assessments and treatment plans, such as physiotherapy, occupational therapy, and neuropsychology reports). The breadth of the medical/rehabilitation documentation was dependent upon the type and amount of assessments and treatments that a claimant accessed. The Alberta Health and Wellness statement of benefits, which provided billing information from the various health care professionals who had treated a claimant, were also reviewed. Correspondences between the key players in the MR phase were reviewed as

---

<sup>35</sup> Note that with the introduction of e-health digital recordings, clinical progress notes were type written on a few of the claimants' files.

well. Medical/Rehabilitation information was also gleaned from the standard no-fault claims forms for accident benefits.<sup>36</sup>

### ***3.8.3 Documents Pertaining to Claims Administration Phase***

Documents reviewed as part of the claims administration (CA) phase included standard claims forms, adjusters handwritten and computer generated notes, and correspondences between the key players in this phase.

### ***3.8.4 Documents Pertaining to Dispute Resolution Phase***

Documents pertaining to the dispute (DR) phase included a statement of claim, and in some claims, a statement of defence. Documents used as part of trial proceedings were also reviewed. These included transcripts of a witnesses' examination for discoveries, affidavits, certificates, notices, orders, factums, briefs, writs, rebuttals, and discontinuance of action / proceedings. A judgment was also rendered following an arbitration or court proceeding in a few of the claims files and these were also reviewed. Bills of Costs for plaintiff lawyers and statements of account for defence lawyers were reviewed as were the correspondences between the key players.

## **3.9 Data Collection and Organization**

This section of the chapter outlines the procedures for data collection and organization that were conducted first on the initial two small studies and then on the main study. This discussion is then followed by a brief outline of the procedure that was used to ensure that the completeness of data collection was achieved.

---

<sup>36</sup> A claimant's academic and employment records were also reviewed. And, when available, academic and employment information regarding family members' was also reviewed, if based on the key players participating in that claims files had used this information to address a claimant's MR needs.)

### ***3.9.1 Preliminary Review of Claims Files for the Initial Studies***

During the initial studies, a preliminary review of all documents for each of the four claims files was conducted in order to sort the documents according to the most appropriate phase in the claims management process. This required document types within each of the claims files to be catalogued and generically renamed. A generic name was given to a document and then catalogued into one of the four phases of the claims management phases based on the main purpose the document was produced.

Sorting the documents according to the claims management process was necessary to better understand the complex nature of claiming in a motor vehicle accident insurance compensation system. The challenge in examining the data contained within each of the claims files in this way is that it required a valid means of sorting the documents by this four-phased model. This was because all of the documents within each of the claims files had originally been ordered chronologically, by the insurance adjusters who had managed these claims, from the date of the accident forward until the claim was closed. Therefore, inter-rater reliability of the sorting of the documents within a claims management process need to be established.

To establish inter-rater reliability, the researcher/myself (Expert 1), who had 20 years of experience in reviewing MVA claims for rehabilitation purposes, and a claims supervisor (Expert 2) who had over 20 years in claims management, independently sorted documents for one of the no-fault claims files by the four-phased approach.<sup>37</sup> The sorting of the documents was

---

<sup>37</sup> The claims supervisor was from Insurer Provider 2. Sorting of an at-fault claims file was a time consuming process. Therefore, to respect the key contact's time, one of the no-fault claims files was sorted instead of an at-fault claims files.

done using four different coloured Post-It Notes used to represent the four sections of the claims management process.<sup>38</sup> Prior to sorting, Expert 2 gave her consent to participate.

Following the sorting, the results were compared. Expert 1 and 2 agreed 100% on the documents that were categorized by the first three sections (the accident/fault investigation, the medical/rehabilitation, and the claims administrative phases). However, there was 0% agreement as to the sorting of the documents in to the fourth category (the dispute resolution phase). An average 75% rate of agreement therefore existed between Experts 1 and 2. A briefing between the two experts then took place to discuss the reasons for the disagreement around the sorting of documents in the dispute resolution phase.

Expert 1 was of the view that when a defence lawyer participated in the claims management process, it meant that the disputes were essentially part of the dispute resolution phase. As such, those documents produced and received by a defence lawyer, and other related documentation of the same sort, were categorized by Expert 1 as part of the dispute resolution phase. However, Expert 2 highlighted that while there was agreement that these documents were aspects of a dispute resolution, part of the claims administration phase of a claims management process involved resolving disputes, regardless of whether or not there was defence lawyer participating in the negotiation settlements. Hence Expert 2 had categorized these documents by the claims administration phase.

Experts 1 and 2 then discussed and agreed upon a new definition that best described a dispute resolution phase in an MVA claims management process. The dispute resolution phase was then defined as the use of defence legal expertise to assist the insurance adjuster in

---

<sup>38</sup> Post-It Notes were used to preserve the documents within the claims file in their chronological order.

managing and resolving a dispute as distinct from simply providing an opinion as to the direction or approach an insurer should take. Therefore, if a defence lawyer consulted another key player, such as a physician or an engineer, while preparing for trial, this would be categorized as being part of the dispute resolution process. If an insurer only sought an opinion from a defence lawyer, and no direct contact between the defence lawyer and other key players was made, this type of correspondence would be categorized as part of the claims administration process. This would be the case even if the defence lawyer remained as a “background” key player throughout the dispute resolution process. The demarcation point of when these documents would be considered part of a dispute resolution phase would be the date the case was being prepared for (or set down for) trial, of which a date was clearly outlined in MVA claims files. If there was no trial date set, then documents would remain as part of the claims administration process. Once this was decided, Experts 1 and 2 reviewed the documents again. This resulted in 100% agreement between the two Experts.

### ***3.9.2 Preliminary and Comprehensive Review of Claims Files for Main Study***

The same preliminary review procedures that were used in the initial studies were also used to identify, sort, and catalogue documents from all 57 claims files in the main study. Not all documents within the at-fault claims files were comprehensively reviewed due to the voluminous amount of documents these claims files contained.

Instead, a set of documents needed to be chosen for the comprehensive review. Therefore, another main purpose of the preliminary review was for the researcher to identify the crux of the issues so that the most appropriate set of documents could be identified. For example, if issues pertaining to the accident/fault investigation phase were not relevant to a claims file, then few documents were chosen for a comprehensive review in this section. If a

claimant's degree of injury severity was a key factor, however, then the set of documents to be comprehensively reviewed focused on the documents in the medical/rehabilitation phase.

A case history of each one of these claims files was then developed. I then conferred with the claims adjusters who had managed the claims files and reviewed the case history. The purpose of this discussion was to establish that the crux of the issues had been well understood by the researcher. All documents were reviewed for the no-fault claims files as part of the comprehensive review because these files were relatively small compared to the at-fault claims files. As such, no case conferences with the no-fault insurance adjusters took place to review the case histories of the no-fault claims files.

As part of the comprehensive review, key factors and key players were identified. Pattern clarification was used to make connections between a key factor and key player to determine what patterns were unique to a particular claims file and which ones were common to the claims files. It was the common key factors and key players, defined as occurring in two or more claims files that were coded and analyzed. A cross-case variable approach was also used to identify these and other factors of interest. This approach was taken from Miles and Huberman (1994). Files were organized in a matrix such that the variables could be easily analyzed.

Relevant data from the documents from all the claims files were entered into the display sheets. Other factors of interest were also identified, extracted, and recorded into the displays. These included a claimant's initial level of TBI severity, treatment received, demographic profile, and factors pertaining to the administration of a no-fault and at-fault system. The key factors and key players were also extracted and recorded into their respective displays. The comprehensive review of a claims file was considered complete when I determined that no new information was being uncovered.

### ***3.9.3 Completeness of Data Collection***

At the end of the process described above, I reviewed the displays to ensure that all relevant quantitative and qualitative data in each claims file had been captured. The four at-fault claims files that were reviewed in the initial studies were the last to be reviewed in the main study. It is important to note that the key insurance informants from Insurer Provider 1 had confirmed that documents in these four claims files were representative of MVA insurance compensation claims files across the insurance industry in Alberta. These four claims files were used as a means of determining data saturation.

First, I determined that the core issues and themes that had emerged from the four claims files were similar to those in the other claims files reviewed, and that no new issues or themes had emerged. Second, all questions generated in the initial studies had been answered and no new ones arose. Overall, all aspects of the claims management process for each of the claims files were well understood. As such, no further claims file reviews were necessary.

## **3.10 Data Analysis**

Data analysis was separated into three parts. Part I focused on answering the two main research questions of whether there was a difference between the at-fault and no-fault MVA insurance compensation systems on the dependent measures of adversarialness, cost, responsiveness and recovery, and then if there was a difference between the mild and moderate/severe TBI degrees of severity for the same four dependent variables. Part II focused on the third main question, first identifying key factors and key players significantly involved in each of the four phases of the claims management process, and then examining them to understand their influence, if any, on the dependent measures. Part III used an approach similar to Part II to identify and examine the role of key factors and key players, as well as to help

explain differences found on the dependent measures between the mild and moderate/severe TBI groups. The purpose of this was to shed additional light on reasons found for the differences between the no-fault and at-fault systems.

### ***3.10.1 Part I: Analysis of Between Group Differences on the Main Independent Variables***

An analysis of variance (ANOVA) had been initially proposed to analyse the main effect of and interaction between the two independent variables (two insurance system types and two levels of TBI). The expectation was that a sufficiently large data set could be obtained to allow for sound measurement of normality and variance in each of the cells, in a 2 x 2, between groups design. A minimum of 10 to 15 claimants per cell, or a total sample of 60 was sought.

However, due to the change in source of data for the no-fault system information, and the method of sample selection (which used adjuster recall), the total population of claimants available from the two insurance providers was significantly smaller than anticipated. As described in Section 3.4, the total number of claims files meeting selection criteria was 57, distributed across cells as illustrated in Table 3-4 (below). Overall, there were a smaller number of claimants in the no-fault than at-fault system, and a smaller number of claims files were identified with mild TBI compared to moderate/severe TBI. When contrasted to the minimum of 10 to 15 claimants sought, one cell was significantly under-represented with only eight. See Table 3-4 for number of claimants by TBI severity and claim type<sup>39</sup>.

---

<sup>39</sup> Appendices B9.1 to B9.8 provide demographic statistics of claimants' gender, age, educational level, and income by both claim type and injury severity as of the date of their accident (date of loss) for descriptive purposes only.

**Table 3-4 Sample Populations by TBI Severity and Claim Type**

<i>TBI Severity</i>	Claim Type	
	<b>At-Fault (N=35)</b>	<b>No-Fault (N=22)</b>
<b>Mild TBI (N=24)</b>	16 (45.7%)	8 (36.4%)
<b>Moderate/severe TBI (N=33)</b>	19 (54.3%)	14 (63.6%)

While an ANOVA might still have been carried out with uneven numbers in each cell, an examination of data obtained for the four dependent variables suggested caution. A further complication was that not all of the observed measures for the four dependent variables were normally distributed. Appendices B10.1 to 10.4 provide the statistical data of the dependent variables by claim type and TBI severity for the observed scores. Mathematical transformations, such as the arithmetic square root, were then conducted on the observed measures for the dependent variables to determine whether the data could be transformed into a normal distribution. Not all the transformed data yielded normality as either the skewness or kurtosis of some of the observed measures still fell outside of the acceptable ranges of plus or minus 1.0. Therefore it was decided that a non-parametric test would be used instead of an ANOVA.

With assumptions associated with parametric tests in question, and unequal group sample sizes, a non-parametric statistical test was chosen. The Man-Whitney U test<sup>40</sup> was used as the non-parametric statistical test. As noted by Siegel (1956), a Mann-Whitney U test is one of the most powerful non-parametric tests, but it does not have the restrictive assumptions and requirements associated with the t-test (p. 126).

---

<sup>40</sup> Ferguson (1981) notes that a Wilcoxon rank sum test and MWU test are in effect the same type of test (p. 403).

### ***3.10.2 Part II: Examining Effect of Key Factors/Players on MVA Insurance Compensation Systems***

The purpose of this analysis was to examine the contribution key factors and key players made to dependent variables, found to be significantly different, between the at-fault and no-fault MVA insurance compensation systems in Part I. A review of the data in the claims files identified a number of factors in all four phases of the claims management process that seemed to have some degree of influence on dependent measures (with the plausible contributors changing from one phase to another). To identify which of these had a significant effect, a contingency table analysis, applying Fischer's Exact Test, was used for the four phases of the claims management process. A similar process was used to identify key players (e.g. police, physicians, lawyers, etc.) involved in each phase of the claims management process.

The significant key factors and key players, in each of the four phases of the claims management process, were then further analyzed to determine the influence, if any, each had on the dependent variables. This step involved using one of three types of analyses, depending on the nature of data: Linear (forward, step-wise) regression analyses, Mann-Whitney U tests, or descriptive analyses.

The use of a linear regression analyses required all claims files to be pooled in order to yield a sufficiently large sample size to meet assumptions of normality. Since all 57 claims files could only be pooled if no significant association was found between the mild and moderate/severe TBI severity levels on the key factors/key players being examined (when analysing difference between the two types of systems), a chi-square analysis was conducted. For those variables where no significant difference was found (between the mild and moderate/severe TBI groups), linear regression analyses were subsequently used to select the key

factors (or key players) from all potential key factors (key players) entered into the linear regression analysis. In those instances when the 57 claims files could not be combined, a Mann-Whitney U test was used to identify the significant key factors/players.

Following on the contingency table analysis, the use of either a linear regression analysis or Mann-Whitney U Test worked well for the first three phases of the claims management process, given the sufficient size of the sample within each of these three phases. However only a sub-set of the 57 claims files were resolved in the dispute resolution (DR) phase. Therefore, the only statistical measures that were used in this phase were the contingency table analyses to identify the significant key factors and key players within this phase. That is, because the population was so small, neither regression analyses nor Mann-Whitney U tests were conducted once the significant key factors and key players were identified. Instead, a descriptive analysis of the significant key factors/key players was used to describe their apparent association, if any, to measures of adversarialness and cost.

### ***3.10.3 Part III: Examining Key Factors/Players on TBI Severity***

In Part III, the researcher examined the key factors (and then the key players who participated to address these key factors) to understand their association, if any, to the dependent measures that were significantly different (as determined in Part I) between the mild TBI and moderate/severe TBI groups. The analysis in Part III was conducted in the same manner as outlined in Part II. The intent was to understand these associations in order to give further context to understanding differences found between the at-fault and no-fault MVA systems.

## **Chapter Four: Results**

The results of this study are presented in four parts. Part I addresses the two main research questions that prompted this study, namely:

1. Is there a difference between at-fault and no-fault MVA insurance compensation systems in claimants' access to health care benefits, on measures of adversarialness, cost, responsiveness, and recovery?
2. Is there a difference between MVA claimants with mild as contrasted with moderate/severe degrees of TBI injury on overall MVA system measures of adversarialness, cost, responsiveness, and recovery?

Part II addresses a third question arising from the results of Part I, namely:

3. What are the significant key factors that help explain the differences found in Part I, and who are the significant key players who participate in the claims process to address these key factors?

Where Part I involved concise analyses of quantitative data, Part II required a more lengthy process as outlined in the methods chapter. Given the complexity of the claims management process, the best way of understanding the results of Part II was to examine the key factors and key players in each of the four phases of the claims management process. Part III examines how MVA insurance claimants, diagnosed with TBI, were managed relative to the two types of claims systems. Finally, Part IV wraps up the chapter with a summary of findings.

## **4.1 Part I: Analysis of Independent Variables on Dependent Measures**

A Mann-Whitney U test was conducted to analyze differences between the two independent variables on each of the dependent variables. As was highlighted in the Methods chapter, a Mann-Whitney U test is akin to a Wilcoxon rank sum test.

### ***4.1.1 Comparison of MVA Insurance Compensation Systems***

A summary of findings related to Question one is presented in Table 4-1.

**Table 4-1 Comparison of MVA Insurance Compensation Systems on Dependent Measures**

<i>Test Variable</i>	<i>Criterion Variable</i>	<i>N</i>	<i>Mean Rank</i>	<i>U</i>	<i>P Value (2-Tailed Test)<sup>41</sup></i>
At-fault system	Adversarialness	35	34.40	196	0.002*
No-fault system		22	20.41		
At-fault system	Cost	35	33.63	223	0.008*
No-fault system		22	21.64		
At-fault system	Responsiveness	35	28.17	356	0.635
No-fault system		22	30.32		
At-fault system	Recovery	35	27.14	320	0.282
No-fault system		22	31.95		

A test of the null hypothesis against each of the dependent variables revealed the following:

1. Adversarialness: a statistically significant difference was found between MVA insurance compensation systems in adversarialness ( $U = 196, p = 0.002$ ), with the amount of adversarialness being significantly higher in the at-fault system than in the no-fault system;

---

<sup>41</sup> The asterisks show the variables that are statistically significant,  $p \geq 0.05$ .

2. Cost: a statistically significant difference was found between MVA insurance compensation systems in cost ( $U = 223$ ,  $p = 0.008$ ), with the cost being significantly higher in the at-fault system than in the no-fault system;
3. Responsiveness: no statistically significant difference was found between MVA insurance systems in measures of responsiveness ( $U = 356$ ,  $p = 0.635$ ); and
4. Recovery: no statistically significant difference was found between MVA systems in measures of a claimant's recovery ( $U = 320$ ,  $p = 0.282$ ).

Of the foregoing results for Question 1, the only findings bearing further exploration are those having to do with adversarialness and cost (to be presented in Parts II and III), as there were significant differences found in these two categories. As there was no significant difference found on the measures of responsiveness and recovery, these findings will be set aside.

#### ***4.1.2 Comparison of TBI Severity***

A second Mann-Whitney U test was conducted to analyze differences between the mild and moderate/severe TBI groups for each of the dependent variables. Table 4-2 provides a summary of the results.

**Table 4-2 Comparison of TBI Severity on Dependent Measures**

<i>Test Variable</i>	<i>Criterion Variable</i>	<i>N</i>	<i>Mean Rank</i>	<i>U</i>	<i>P Value (2-Tailed Test)</i>
Mild TBI Moderate/severe TBI	Adversarialness	24	31.19	344	0.390
		33	27.41		
Mild TBI Moderate/severe TBI	Cost	24	21.25	210	0.003*
		33	34.64		
Mild TBI Moderate/severe TBI	Responsiveness	24	29.21	391	0.936
		33	28.25		

<i>Test Variable</i>	<i>Criterion Variable</i>	<i>N</i>	<i>Mean Rank</i>	<i>U</i>	<i>P Value (2-Tailed Test)</i>
Mild TBI	Recovery	24	20.79	199	0.001*
Moderate/severe TBI		33	34.97		

A test of the null hypothesis against each of the dependent variables revealed the following:

1. Adversarialness: no statistically significant difference was found between TBI severity groups in measures of adversarialness ( $U = 344$ ,  $p = 0.390$ );
2. Cost: a statistically significant difference was found between TBI severity groups in cost ( $U = 210$ ,  $p = 0.003$ ), with costs being significantly higher for moderate/severe injury severity;
3. Responsiveness: no statistically significant difference was found between TBI severity groups in measures of responsiveness; and
4. Recovery: a statistically significant difference was found between TBI severity groups in recovery ( $U = 199$ ,  $p = 0.001$ ), with recovery being significantly longer for claimants in the moderate/severe TBI group, compared to those in the mild TBI severity group.

Of the foregoing results related to research Question 2, the measures of adversarialness and responsiveness showed no significant difference, so these measures have also been set aside. It is notable, however, that measures of system responsiveness were not significantly related to either the type of insurance system or to degree of TBI severity. These results were surprising given that one main reason cited in the literature review for replacing an at-fault insurance compensation system with a no-fault system was that a no-fault system was more responsive to the needs of the claimant in terms of access to health care benefits (so those claiming in a no-fault system would have a faster rate of recovery).

Measures of cost and recovery showed significant differences between the two categories of TBI severity. These results were not surprising. Claimants in the moderate/severe TBI group would have both a significantly longer rate of recovery and, therefore, a significantly greater amount of cost, compared to those in the mild TBI group.

#### ***4.1.3 Relation of Cost to MVA System and to TBI Severity***

The interesting question arises as to whether degree of TBI or the claim type (no-fault and at-fault MVA insurance compensation systems) was the more significant contributor to cost. To address this question, a regression analysis was conducted of cost data against both independent variables. The Set of Tables 4-3a outlines the summary of the findings.

#### **Set of Tables 4-3a Contribution of Injury Severity Relative to MVA Systems on Cost Enter Method**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.492	.242	.214	.384	.242

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	2.55	2	1.274	8.627	.001
	Unexplained (Residual)	7.98	54	.148		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	.150	.086		1.75	.086
	Claim Type	-.159	.105	-.180	-1.51	.136
	Injury Severity	.413	.104	.475	3.99	.0002

The difference in the beta coefficients showed that the effect of TBI severity (Beta = 0.475) on cost was approximately two and half times the size compared to claim types (Beta = 0.18), which was statistically significant ( $p = 0.001$ ).

A Mann-Whitney U test was then conducted to examine the differences in cost within the at-fault system and the no-fault system based on TBI severity. See Table 4-3b for a summary of these results.

**Table 4-3b Cost Difference between MVA Systems Based on TBI Severity**

<i>Grouping Variable</i>	<i>Test Variable</i>	<i>Criterion Variable</i>	<i>N</i>	<i>Mean Rank</i>	<i>U</i>	<i>P Value (2-Tailed Test)</i>
<b>Key Factors</b>						
At-Fault System	Mild TBI Moderate/Severe TBI	Cost	16 19	11.69 23.32	51	0.001*
No-Fault System	Mild TBI Moderate/Severe TBI	Cost	8 14	8.88 13.00	35	0.165

The test showed a significant difference in cost in the at-fault system ( $p = 0.001$ ) between the mild TBI and moderate/severe TBI group, with the cost being higher for claimants in the moderate/severe TBI group. There was no significant difference in cost in the no-fault claims system between mild TBI and moderate/severe TBI groups. Further analysis pertaining to TBI severity is presented in Part III.

The comparative difference in the amount of dollars accessed between the two types of MVA insurance compensation systems and between the two TBI severity groups is presented in Table 4-3c.

**Table 4-3c Cost Difference between MVA Systems Based on TBI Severity**

<i>Grouping Variable</i>	<i>Test Variable</i>	<i>Criterion Variable</i>	<i>N</i>	Mean (CDN. Dollars)
<b>Key Factors</b>				
At-Fault System	Mild TBI	Cost	16	\$127, 286
	Moderate/Severe TBI		19	\$595,163
No-Fault System	Mild TBI	Cost	8	\$1,046
	Moderate/Severe TBI		14	\$12,960

In the at-fault system, claimants in the mild TBI group obtained on average \$127, 286 in damages, and claimants in the moderate/severe TBI group obtained on average \$595,163 in damages. In contrast, in the no-fault system claimants in the mild TBI group obtained on average \$1,046 and claimants in the moderate/severe TBI group obtained, on average, \$12,960. Thus, the amounts awarded to the claimants in the at-fault system, as a whole, was fairly generous when one considers that claimants in the no-fault system accessed a surprisingly small amount of accident benefits relative to the amount of dollars that were available to them (recall that prior to October 1, 2004 the available limit was \$10,000; thereafter the available limit changed to \$50,000.00), especially considering their at-fault claims were filed due to the serious nature of their injuries.

An interesting factor that pertains to differences in claiming behaviour in access to no-fault benefits compared to access to third-party (at-fault) benefits is whether or not the claimants were liable for the accident. Considering only the 22 claimants in the no-fault system, 18 (64%) were not liable and eight (36%) were liable. The amount these claimants accessed in the way of no-fault benefits, by degree of TBI impairment, is presented in Table 4-3d.

**Table 4-3d Cost Difference in No-Fault System Based on Liability and TBI Severity**

<i>Grouping Variable</i>	<i>Test Variable</i>	<i>Criterion Variable</i>	<i>N = 22</i>	Mean (CDN. Dollars)
<b>Key Factors</b>				
Claimant Liable for MVA	Mild TBI Moderate/Severe TBI	Cost	2 6	\$617 \$25,798
Claimant Not Liable for MVA	Mild TBI Moderate/Severe TBI	Cost	8 14	\$1,188 \$3,330

Clearly, claimants in the moderate/severe TBI group who were liable for the MVA accessed the most amount of accident benefits with an average amount of \$25,798. This point is relevant because, first, these claimants had sustained the most severe degree of TBI, based on their GCS level, and second, these claimants had no right to access benefits through a third-party (at-fault) claim. The only available benefits this group could receive, then, beyond the amount they accessed in the public health care system, was through their no-fault MVA insurance provider. Contrast this amount to the comparatively small amount that both the mild and moderate/severe groups who were not liable for the accident accessed in the no-fault system (\$1,188 and \$3,300, respectively).

Now consider the amounts that claimants who were not liable for the accident accessed in the no-fault system (\$1,888 for the mild TBI group and \$3,300 for the moderate/severe TBI group) compared to the amounts that the claimants received in the at-fault system (\$127, 286 for the mild TBI group and \$595,163 for the moderate/severe TBI group, as presented in Table 4-3d). Factors other than a claimant's disability caused by the degree of their TBI impairment, and their need to access private health care benefits through this MVA insurance compensation

system, are likely at play for claimants who are not liable for the accident and who make a third-party (at-fault claim). These will be touched upon in the Discussion chapter.

## **4.2 Part II: Effect Key Factors/Players have on Adversarialness and Cost**

In answer to Research Question 3, in order to gain a deeper understanding of the differences between the two motor vehicle accident (MVA) insurance compensation systems, the key factors and key players involved in each of the four phases of the claims management process were examined to gauge their effect, if any, on the measures of cost and adversarialness. As described in section 3.10.2 of the Methods chapter, procedures began with cross-tabulation (contingency table) analyses to first determine the significant key factors, and then the key players, for each of the four phases of claims management. In the first three phases of the claims management process (AF, MR, and CA phases), those key factors (and key players), showing statistically significant differences, were then further analyzed<sup>42</sup> to examine their relationship to the dependent variables of adversarialness and cost using either a Mann-Whitney U test or a regression analysis. In the DR phase a descriptive analysis was conducted instead, due to the small number of claimants using a dispute resolution process to settle their claim.

### **4.2.1 Accident/Fault Investigation (AF) Phase**

#### **4.2.1.1 Identifying Key Factors/Key players in AF Phase**

Table 4-4 provides a summary of results of the contingency table analyses for the key factors and key players in the Accident/Fault Investigation (AF) phase, using Fischer's Exact Test to determine the probability value of the relationship between the variables being examined.

---

<sup>42</sup> Key factors were analysed separately to key players.

**Table 4-4 Key Factors/Players by MVA Insurance Compensation Systems**

<i>Test Variable</i>	<i>At-Fault System N = 35</i>	<i>No-Fault System N = 22</i>	<i>P value (Fisher's Exact Test, 2-sided)</i>
<b>Key Factors</b>			
Liability/Insurance Coverage an issue <sup>43</sup>	14 (40.0%)	1 (4.5%)	0.004*
Liability/Insurance Coverage not an issue <sup>44</sup>	21 (60.0%)	21 (95.5%)	
Contributory negligence/cause an issue	18 (51.4%)	0 (0.00%)	0.00002*
<b>Key Players</b>			
Police participated <sup>3</sup>	35 (100%)	22 (100%)	
Police did not participate	0 (0%)	0 (0%)	
Insurance adjuster	27 (77.1%)	13 (59.1%)	0.234
Insurer (external)	14 (40.0%)	7 (31.8%)	0.584
Defence lawyer	15 (42.9%)	0 (0.00%)	0.0002*
Engineer	17 (48.6%)	0 (0.00%)	0.00005*
Witnesses	31 (88.6%)	4 (18.2%)	0.0000001*
Journalist	9 (25.7%)	3 (13.6%)	0.335

The key factors that showed a statistically significant difference between the at-fault and no-fault systems were an insured driver's liability/insurance coverage ( $p = 0.004$ ) and a claimant's contributory negligence/cause-in-fact (cause) of the injury severity ( $p = 0.00002$ ). These factors were mostly relevant for the at-fault claims when compared to the no-fault claims.

---

<sup>43</sup> Two points are relevant here. First, "fault" in this study was based on a legal definition and not an insurance one (where an insured driver's premiums are then adjusted). From a legal context, none of the at-fault claims was actually determined to be liable for the accident, as this question was not posed to a judiciary body for determination. However, when factors of fault, such as liability, were an issue, the defence lawyer would often approach the issue with an insurance adjuster in the following manner: "If a court were to rule on the insured driver's level of fault, it would likely find your insured to be X percent at fault?"

Second, while fault determination is typically not a factor in no-fault claims, it was in this case because the claimant had no access to any other insurance compensation system. The no-fault insurance adjuster was of the view that the no-fault claim was likely being used to build-up evidence to support the at-fault claim being made; both of which were being funded by the third party insurance company. The researcher discussed this scenario with one of the claims supervisors and confirmed this perspective. It was noted that claims of this nature, involving pedestrians who do not have other types of accident benefits coverage, is rare.

<sup>44</sup> The key factors and key players are all analyzed using a chi-square analysis. Thus each has data presented in a 2 x 2 format, as illustrated in the cross-tabulations for liability/insurance coverage and police involvement. However, for presentation purposes, only the data pertaining to the claims files in which the key factors were present and the key players participated are provided. This pertains to all remaining cross-tabulations throughout this chapter.

For key players, the contingency table analysis showed a statistically significant difference between at-fault and no-fault systems with the participation of the following three groups:

1. Defence lawyers ( $p = 0.0002$ ),
2. Engineers ( $p = 0.00005$ ),
3. Witnesses ( $p = 0.0000001$ ).

Defence lawyers assisted an insurance adjuster in ascertaining the facts related to such matters as the cause(s) of the MVA, the degree of negligence (blameworthiness) of both the insured driver and claimant, and an estimated value of a claim. Pinpointing these facts included gathering forensic evidence from an engineer who investigated the factors of an accident and obtaining eyewitness statements from witnesses at the scene of the accident. The participation of these three key players was more common to at-fault claims than to no-fault claims, as determining the degree of negligence was a key factor in the at-fault system.

#### 4.2.1.2 Influence of Key Factors/Players on Adversarialness and Cost

The key factors and key players that showed a significant difference, as outlined in Table 4-4, were then entered into to a step-wise (forward) regression analyses<sup>45</sup> to examine their relationship to the measures of adversarialness and cost. The purpose for this type of analysis was to understand the influence these key factors and key players had on measures of adversarialness and cost. A summary of the results is presented in the Set of regression Tables 4-5a. The data pertaining to the enter model of the regression analysis is presented first, followed by the data pertaining to the step-wise (forward) model for the regression analysis.

---

<sup>45</sup> All regression analyses conducted were step-wise.

### Set of Tables 4-5a Key Factors in AF Phase on Adversarialness

Data for Enter Method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.449	.202	.172	20.506	.202

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	5749	2	2874.3	6.84	.002
	Unexplained (Residual)	22708	54	420.5		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	30.0	3.40		8.82	4.9E-12
	Liability/ Insurance Cover	12.1	6.91	.239	1.75	.085
	Contr. Negligence/Cause	13.8	6.55	.288	2.11	.039

Data for Step-Wise (Forward) Method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.396	.157	.141	20.890	.157

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	4454	1	4454.0	10.2	.002
	Unexplained (Residual)	24002	55	436.4		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	31.5	3.35		9.43	4.4E-13
	Contr. Negligence/Cause	19.0	5.95	.396	3.19	.002

Of the two key factors, liability/insurance cover and contributory negligence/cause, the only key factors significantly associated with adversarialness was a claimant's contributory negligence/cause of TBI severity ( $p = 0.002$ ), as per the step-wise regression data. Looking at the R-squared value in the step-wise method regression data, approximately 16% of the variance of adversarialness could be explained by contributory negligence/cause of TBI severity.

Next, data on the significant key players associated with adversarialness is presented in the Set of Tables 4-5b. Due to the amount of data associated with both enter and step-wise regression models, only the data pertaining to the step-wise method are presented in the Set of Tables 4-5b. Please refer to Appendix C1.1 for the data pertaining to the enter method regression analysis for key players associated with adversarialness in the AF phase.

#### **Set of Tables 4-5b Key Players in AF Phase on Adversarialness**

Step-Wise (Forward) Method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.529	.280	.267	19.299	.280

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	7972	1	7972.3	21.406	.00002
	Unexplained (Residual)	20484	55	372.4		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	30.5	2.98		10.23	2.4E-14
	Defence Lawyer	26.9	5.80	.529	4.63	.00002

Of the three key players (engineer, defence lawyer, and witnesses), the only key player significantly associated with adversarialness was a defence lawyer ( $p = 0.00002$ ). Looking at the R squared value for the step-wise method, 28% of the variance of adversarialness could be explained by the participation of a defence lawyer.

Next, data on the significant key players associated with cost is presented in the Set of Tables 4-5c. Again, due to the amount of data related to both the enter and step-wise methods, only the step-wise regression data is presented. Please refer to Appendix C1.2 for the data pertaining to the enter method regression analysis for key players associated with cost in the AF phase.

#### **Set of Tables 4-5c Key Players in AF Investigation Phase on Cost**

Step-Wise (Forward) Method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.383	.147	.131	.404	.147

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	1.54	1	1.544	9.45	.003
	Unexplained (Residual)	8.98	55	.163		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	.230	.062		3.69	.001
	Defence Lawyer	.374	.122	.383	3.07	.003

Of the three key players (engineer, defence lawyer and witnesses), the only key player significantly associated with cost was a defence lawyer ( $p = 0.003$ ). Looking at the R squared

value for the step-wise method, approximately 15% of the variance of cost could be explained by the participation of a defence lawyer.

#### **4.2.2 Medical/Rehabilitation (MR) Phase**

##### **4.2.2.1 Identifying Key Factors/Key Players in MR Phase**

The same procedure used to analyse data to determine the significant key factors and key players in the AF phase was used to determine the significant key factors and key players in the medical/rehabilitation (MR) phase. Table 4-6 presents the findings.

**Table 4-6 Key Factors/Players by MVA Insurance Compensation Systems**

<i>Test Variable</i>	<i>At-Fault System N = 35</i>	<i>No-Fault System N = 22</i>	<i>P value (Fisher's Exact Test, 2-sided)</i>
<b>Key factors</b>			
<b>Type of health care accessed</b>			
Emergency medical care			
- Ambulance at scene	32 (91.4%)	21 (95.5%)	1.00
- Emergency care facility	31 (91.4%)	20 (91.0%)	1.00
ICU (Hospital-based inpatient care)			
- Observation only (uni-disciplinary care)	2 (5.7%)	2 (5.7%)	0.635
- Multi-disciplinary care	20 (57.1%)	13 (59.1%)	1.00
- Radiological evidence of skull/brain injury <sup>46</sup>	22 (62.9%)	11 (50.0%)	0.413
Neuro/TBI Rehabilitation (hospital-based inpatient care)	5 (14.3%)	6 (27.3%)	0.305
Average length of hospital-based inpatient Care <sup>47</sup>	34.86 (days)	66.50 (days)	0.02*
Community-based care			
- Hospital-based outpatient neuro/TBI follow-up/assessment	9 (25.7%)	5 (22.7%)	1.00
- Specialized voc/academic rehabilitation	4 (11.4%)	2 (9.1%)	1.00
- Long-term care	3 (8.6%)	2 (9.1%)	1.00
<b>Primary treatment: TBI</b>			
Hospital-based inpatient care	18 (51.4%)	13 (59.1%)	0.598
Community-based care	12 (34.2%)	9 (40.9%)	0.779

<sup>46</sup> X-ray techniques were CT scan and or MRI. A value of 1 in this study meant that a radiologist either confirmed or suspected evidence of a skull/head injury.

<sup>47</sup> Average length of hospital-based inpatient care is included as a subset of the type of health care accessed. It is a continuous variable compared to the other variables in this group, which are discrete. Levene's test was therefore used instead of Fisher's Exact Test.

<i>Test Variable</i>	<i>At-Fault System N = 35</i>	<i>No-Fault System N = 22</i>	<i>P value (Fisher's Exact Test, 2-sided)</i>
<b>Key Factors</b>			
<b>Primary treatment: other injury</b>			
Hospital-based inpatient care	4 (11.4%)	2 (9.1%)	1.00
Community-based care	8 (22.9%)	9 (40.9%)	0.234
<b>Discrepant health information</b>			
Pre-accident health	20 (57.1%)	3 (13.6%)	0.002*
Change in TBI diagnosis	24 (68.6%)	7 (31.8%)	0.013*
<b>Key Players</b> (community-based HCPs)			
Family physician	22 (62.9%)	7 (31.8%)	0.031*
Neurologist	12 (34.2%)	3 (13.6%)	0.124
Psychologist / psychiatrist	12 (34.2%)	5 (22.7%)	0.391
Rehabilitation physician	11 (31.4%)	3 (13.6%)	0.207
<b>Key Player's Continued</b>			
Case manager	5 (14.3%)	9 (40.9%)	0.031*

Of the 16 discrete factors identified, three were significantly different in the at-fault and no-fault systems: a claimant's average length of hospital stay (LOS), discrepant information on pre-accident health, and changes in TBI diagnosis. The latter two were clustered to create one category on discrepant health information.

A longer LOS was indicative of a greater degree of injury sustained in the MVA. An examination of files within the no-fault system indicated there were more claimants with a greater degree of TBI severity compared to claimants whose degree of TBI severity was documented as being mild.

Both types of discrepant health information were significantly associated with the at-fault system than the no-fault system. That is, the at-fault claims files contained more discrepant health information pertaining to claimants pre-accident health as being an issue ( $p = 0.002$ ) and

more discrepant health information pertaining to a change in TBI diagnosis<sup>48</sup> ( $p = 0.013$ ) as compared to discrepant health information (in these two areas) for the no-fault claims.

Of the five groups of health care professionals (HCPs) who participated in the MR phase (family physicians, neurologists, psychologists/psychiatrists, rehabilitation physicians, and case managers), only two HCP groups showed a statistically significant difference in terms of their direct involvement with claims files within the at-fault and no-fault systems. Family physicians were asked to provide assessments in more at-fault claims compared to providing an assessment for no-fault claims ( $p = 0.031$ ) and case managers participated in more no-fault claims than at-fault claims ( $p = 0.031$ ).

#### 4.2.2.2 Effect of Key Factors/Players in MR phase on Adversarialness and Cost

Mann-Whitney U tests were conducted, first on the measures of adversarialness and then on the measure of cost for the key factors and key players that showed a significant difference (as presented and identified by the asterisks in Table 4-6). The findings are presented in Table 4-7.

**Table 4-7 Key Factors/Players in MR Phase on Adversarialness and Cost**

<i>Grouping Variable</i>	<i>Test Variable</i>	<i>Criterion Variable</i>	<i>N</i>	<i>Mean Rank</i>	<i>U</i>	<i>P Value (2-Tailed Test)</i>
<b>Key Factors</b>						
At-Fault System	Pre-accident health an issue	Adversarialness	20	22.15	67	0.005*
	Pre-accident health not an issue		15	12.47		
No-Fault System	Pre-accident health an issue	Adversarialness	3	18.83	6.5	0.030*
	Pre-accident health not an issue		19	10.34		

<sup>48</sup> When a change in TBI diagnosis was made it was always from a less to more severe TBI, and included a change from no initial TBI diagnosis to a mild TBI one, a change from a mild TBI diagnosis to a more moderate/severe TBI one, or a change from a moderate or severe TBI diagnosis to a “very” severe TBI diagnosis.

<i>Grouping Variable</i>	<i>Test Variable</i>	<i>Criterion Variable</i>	<i>N</i>	<i>Mean Rank</i>	<i>U</i>	<i>P Value (2-Tailed Test)</i>
At-Fault System	Change in TBI diagnosis	Adversarialness	24 11	20.23	78.5	0.056
	No change in TBI diagnosis			13.14		
No-Fault System	Change in TBI diagnosis	Adversarialness	7 15	16.29	19	0.017*
	No change in TBI diagnosis			9.27		
At-Fault System	Length of hospital stay < 2 days	Cost	16 19	11.56	49	0.0004*
	Length of hospital stay $\geq$ 2 days			23.42		
No-Fault System	Length of hospital stay < 2 days	Cost	9 13	10.06	45.5	0.393
	Length of hospital stay $\geq$ 2 days			12.50		
<b>Key Players</b>						
At-Fault System	Family physician participation	Adversarialness	22 13	20.23 14.23	94	0.098
	No family physician participation					
No-Fault System	Family physician participation	Adversarialness	7 15	18.00 8.47	7.0	0.001*
	No family physician participation					
At-Fault System	Case manager participation	Adversarialness	5 30	16.90 18.80	69.5	0.802
	No case manager participation					
No-Fault System	Case manager participation	Adversarialness	9 13	15.83 8.50	19.5	0.007*
	No case manager participation					

Based on the difference between the mean ranks of the Mann-Whitney U tests that were conducted on the aforementioned key factors, the results showed that adversarialness was significantly higher in both the at-fault ( $U = 67$ ,  $p = 0.005$ ) and no-fault system ( $U = 6.5$ ,  $p = 0.030$ ), when a claimant's pre-accident health was an issue. Adversarialness also was significantly higher in the no-fault system ( $U = 19$ ,  $p = 0.017$ ) when there was a change in TBI diagnosis, but this factor did not quite achieve significance ( $U = 78.5$ ,  $p = 0.056$ ) in the at-fault system. Given how close these latter results were to being statistically significant, consideration

is given to the relationship between the change in TBI diagnosis and adversarialness in the at-fault system in the Discussion chapter.

Cost was significantly higher in the at-fault system for LOS greater than two or more days ( $U = 49$ ,  $p = 0.0004$ ), but no significant difference was found on the same factor in the no-fault system ( $U = 45.5$ ,  $p = 0.393$ ). In the at-fault system the review of a claimant's health care records was an integral part of evidence, requested by an adjuster, to evaluate a claim for TBI. As previously outlined, a longer LOS indicated a greater degree of TBI severity and hence a greater degree of financial loss (based on a claimant's ability to return to work and other essential activities of daily living). A greater degree of loss resulted in a larger settlement in the at-fault system. In the no-fault system, however, an insurance adjuster did not request a claimant's health care records as a matter of course. Instead, the no-fault adjuster relied on medical/rehabilitation information contained in the no-fault forms. Therefore, the amount of funding a claimant received in the no-fault system was not initially based on receipt of his or her health care records to demonstrate proof of loss. A no-fault insurance adjuster only requested health care records if a claimant was not recovering at a rate in keeping with his or her initial degree of injury or if subsequent information became available that created doubt in the insurance adjuster's mind as to the legitimacy of the claim. More importantly, the only claimants who accessed the full amount of funding from the no-fault system were those claimants who sustained severe TBI, the majority of whom were liable for the accident and hence could not make a claim in the at-fault system.

Both key players identified in Table 4-6 (family physicians and case managers) were significantly associated with a higher degree of adversarialness. The mean ranks showed that adversarialness was significantly higher in the no-fault system when a family physician

participated ( $U = 7.0$ ,  $p = 0.001$ ). The test indicated no significant difference ( $U = 94$ ;  $p = 0.098$ ) for physician participation in the at-fault system. In regards to case managers, the test showed a significant difference ( $U = 19.5$ ,  $p = 0.007$ ) in the no-fault system, with adversarialness significantly higher when a case manager participated. However the test indicated no significant difference ( $U = 69.5$ ,  $p = 0.802$ ) regarding participation of a case manager in the at-fault system.

#### **4.2.2.3 Effect of Discrepant Health Information on Adversarialness**

The key factor of discrepant health information (comprised of the cluster of a claimant's pre-accident health being an issue and a change of TBI diagnosis being made) influenced a higher degree of adversarialness. Closely associated with discrepant health information was a health care professional's (HCP's) use of a claimant's subjective recall (self-report) of post-traumatic amnesia (PTA) to change a TBI diagnosis.

To examine this apparent phenomenon more closely, two case examples are provided below. The two cases show how different ways of measuring and describing the claimants' injuries (including the use of retrospective, subjective PTA), created discrepant health information on their claims files. The first is an example of a claimant who sustained a severe TBI, based on the measure of the Glasgow Coma Scale (GCS) scored of eight or less on a scale of 15. The second is an example of a claimant who sustained a moderate TBI based on their GCS score of 12 on 15.

##### **4.2.2.3.1 Case Illustration 1**

Table 4-8 illustrates how assessment of TBI severity changed over time, as illustrated in excerpts from reports contained in the claimant's file.

**Table 4-8 Changes to TBI Severity as Illustrated in Report Excerpts**

Type of Report	Date of Report <sup>49</sup>	Health Care Professional	Excerpt
Admission to in-patient hospital-based TBI rehabilitation	August 2001	Rehabilitation physician (E3)	GCS - 6/15
Discharge from in-patient hospital-based TBI rehabilitation	November 2001	Rehabilitation physician (E3)	Cognitive impairments: severe...PTA 4-6 weeks
Neuropsychological IME to the plaintiff	February 2002	Psychiatrist	[Claimant] reports amnesia for two to three days following the accident
No-Fault Medical Certificate Form	June 2002	Rehabilitation physician (E3)	Diagnosis: traumatic brain injury
Medical-legal report to plaintiff lawyer	May 2008	Rehabilitation physician (E3)	Using the Russell Scale of PTA [claimant] was graded as having suffered an extremely severe TBI due to prolonged (six week) period of amnesia.

In this example, two health care professionals reported the claimant's degree of TBI and related cognitive symptoms over a period of seven years. The rehabilitation physician completed four separate reports. Two reports were produced for hospital-based inpatient care in 2001. The other two followed: (1) one in 2002, which was as a standard medical form for accident benefits for the no-fault claim; and (2) one in 2008, which was a medico-legal report submitted in response to a request by the claimant's plaintiff lawyer as part of the at-fault claim. Note that this HCP described the claimant's TBI severity in three different ways, yielding different descriptions of the claimant's TBI severity (GCS score of 6/15; PTA of 4 to 6 weeks – severe; TBI with no mention of the degree of severity; and finally the Russell Scale of PTA – extremely severe). The second HCP, the psychiatrist, provided a neuropsychological IME assessment for the plaintiff lawyer as part of the at-fault claim. This psychiatrist also used PTA. Note that in the psychiatrist's report, the duration of PTA was recorded as being 2 to 3 days, which was in

---

<sup>49</sup> The precise dates have not been included to protect the claimant's confidentiality

contrast with amount of PTA recorded by the rehabilitation physician (which was 4 to 6 weeks).

Both PTA scores were based on self-reports by the claimant.

What is notable in this example is that there was a marked difference in duration of PTA noted by the two HCPs. In all, this claimant had a change in TBI diagnosis from severe to extremely severe, largely based on self-reported PTA measurements. Also of relevance is the fact that this claimant hired a plaintiff lawyer within the first week of the MVA. The date of hire was between the time the claimant was admitted for hospital-based inpatient care (of which no PTA was identified in the admission report) and the time the patient was discharged (at which time a measure of PTA was provided).

#### 4.2.2.3.2 Case Illustration 2

The following case illustrates how a diagnosis for a physical trauma takes precedence over a diagnosis of TBI during the hospital-based inpatient care and the community-based care but where a diagnosis of TBI can then overshadow a diagnosis of physical trauma as part of the medico-legal aspect of the claim. The specifics of the assessment are illustrated in Table 4-9.

**Table 4-9 Changes to TBI Severity as Illustrated in Report Excerpts**

Type of Report	Date of Report	Health Care Professional	Excerpt
In-patient neuro/TBI consultation	November, 2002	Rehabilitation physician (E3)	[GCS - 12/15] Alert, oriented 10/10, PTA - 1 day self-report
Home Care Occupational Therapy Report	December, 2002	Occupational Therapist	[diagnosis of] deep vein thrombosis [following a fracture of the lower leg].
Community-based neuro/TBI assessment	June, 2003	Rehabilitation physician (E3)	Diagnosis: Very severe traumatic brain injury (PTA 1-2 weeks)
Neuropsychological Report to the plaintiff lawyer	July, 2004	Psychologist	Based on review of the hospital chart, [claimant] had a GCS score of 12/15... indication of several days of post-traumatic amnesia. This would indicate a moderate/severe brain injury

In this second example, three HCPs (rehabilitation physician, psychologist and occupational therapist) assessed the claimant as part of the hospital-based inpatient and community-based out-patient care. During the hospital-based inpatient stay, the primary diagnosis was for a leg trauma sustained during the MVA. The rehabilitation physician also provided the claimant with a consultation during ICU care to assess if there was a need for hospital-based inpatient neuro/TBI care. The consultation note by the rehabilitation physician indicated that the claimant was fully alert and that, based on a self-report, PTA lasted one day. Instead of continuing on with hospital-based inpatient neuro/TBI rehabilitation care, this claimant was then discharged from ICU care even though the GCS score indicated that he or she had sustained a moderate TBI. Upon discharge, community-based treatment was provided for the primary diagnosis of leg trauma and no community-based treatment was provided for the TBI.

Seven months after the MVA, though, the same rehabilitation physician changed the claimant's diagnosis to a very severe TBI. This point is relevant because from the review of the medical/rehabilitation documentations for the other claimants who had sustained the same degree of brain injury, based on their GCS score, all others had been recommended to attend hospital-based inpatient neuro/TBI rehabilitation. What also is notable from the review of this claims file is that the claimant hired the plaintiff lawyer around April 2003,<sup>50</sup> which preceded the medico-legal report by only a few months and the subsequent diagnosis of severe TBI based on the measure of PTA. Prior to this date, the claimant was not represented by any plaintiff counsel.

---

<sup>50</sup> First date of communication from the plaintiff lawyer to the insurance adjuster was April 15, 2003. This was a standard introductory letter that plaintiff lawyers use to indicate to an insurance adjuster they have been hired by the claimant.

It appears that the change in TBI diagnosis for this claimant was made solely on the basis of the claimant's self-report of PTA, which had changed from a one-day PTA, as described by the rehabilitation physician as part of the ICU consultation, to a one to two week PTA measure, as described by the same rehabilitation physician, which was now part of a community-based report. While this is striking in and of itself, considering it was the same HCP reporting, it is even more curious that the claimant received no TBI treatment or TBI follow-up assessment after the change in TBI diagnosis. The discrepancy raises the question: why the change in TBI diagnosis, if not to address the claimant's rehabilitation needs? This case will be further discussed in the Discussion chapter. The claimant was then re-assessed one year later by the psychologist, who noted several days of PTA, and from which a TBI diagnosis of moderate to severe was assigned. In all, this one claimant had a TBI change of diagnosis from moderate, based on the initial GCS, to very severe by one HCP and moderate/severe by another HCP, largely based on self-reported measures of PTA. This claimant accessed no treatment for a TBI throughout the entire claim.

#### ***4.2.3 Claims Administration (CA) Phase***

##### **4.2.3.1 Identifying Key Factors/Players in CA Phase**

Table 4-10 summarizes the results of the findings on key factors and key players in the claims administration (CA) phase.

**Table 4-10 Key Factors/Players by MVA Insurance Compensation Systems**

<i>Test Variable</i>	<i>At-Fault System N = 35</i>	<i>No-Fault System N = 22</i>	<i>P value (Fisher's Exact Test, 2-sided)</i>
<b>Key Factors</b>			
Insurance policy limit an issue	18 (51.4%)	1 (4.5%)	0.0002*
Claimant related to insured driver	6 (17.1%)	11 (50%)	0.016*
<b>Key Players</b>			

<i>Test Variable</i>	<i>At-Fault System N = 35</i>	<i>No-Fault System N = 22</i>	<i>P value (Fisher's Exact Test, 2-sided)</i>
Adjuster	35 (100%)	22 (100%)	
Insurer (internal)	35 (100%)	22 (100%)	
Insurer (external)	22 (62.9%)	9 (40.9%)	0.172
Claimant	13 (37.1%)	18 (81.8%)	0.001*
Family member/friend	11 (31.4%)	5 (22.7%)	0.006*
Insured driver	20 (57.1%)	0 (0.0%)	0.000003*
Plaintiff lawyer	32 (91.4%)	15 (68.2%)	0.035*
Defence lawyer	21 (60.0%)	1 (4.5%)	0.00002*
Surveillance investigator	15 (42.9%)	3 (13.6%)	0.039*
IME HCP	17 (48.6%)	3 (13.6%)	0.010*
Treating HCP	6 (17.1%)	9 (40.9%)	0.066

The results of the contingency table analysis showed a statistically significant difference between the at-fault and no-fault systems (using Fischer's Exact Test), and between both key factors (insurance policy limit being an issue and a claimant being related to the insured driver). First, insurance policy limits were much more of an issue in the at-fault than no-fault system ( $p = 0.0002$ ). Second, there were more MVA claimants related to the insured driver in the no-fault system than in the at-fault system ( $p = 0.016$ ).

The results of the contingency table analysis showed that, of the 11 key player groups who participated in the claims administration (CA) phase, there was a statistically significant difference between types of at-fault and no-fault systems for seven (7) of these: the claimant ( $p = 0.001$ ), family member/friend<sup>51</sup> ( $p = 0.006$ ), insured driver (includes the estate of the insured

---

<sup>51</sup> Note that family member/friend as a key player in the CA phase is a different variable from the key factor of claimant related to insured driver.

driver) ( $p = 0.000003$ ), plaintiff lawyer ( $p = 0.035$ ), defence lawyer ( $p = 0.00002$ ), surveillance investigator ( $p = 0.039$ ), and the independent medical examiners<sup>52</sup> ( $p = 0.010$ ).

Surveillance investigation of a claimant (or investigation of other factors such as credit history, liens or loans) was primarily sought to help evaluate the merits of a claim pertaining to the disability caused by the MVA and a claimant's recovery. Surveillance investigators were typically used only when discrepancies existed in the medical/rehabilitation (MR) documents or a plaintiff lawyer was not providing these MR documents in a timely manner (usually after several requests spanning months to years). An insured driver also participated on these types of claims, primarily to ensure that their interests were being protected. It is important to note, however, that the insured driver only became involved in the at-fault claims files at the request of the insurance adjuster or defence lawyer. In some cases, eyewitness reports from key players such as friends, family members, employers, and co-workers, were also used to obtain information of a claimant's pre-accident function in order to compare it with their post-accident function. Direct participation by a plaintiff lawyer, defence lawyer, insured driver, family member/friend, surveillance investigator, and independent medical examiner, was more prevalent in the at-fault system than in the no-fault system (as more direct information had to be ascertained to settle an at-fault claim). In contrast, there was more direct participation of a claimant in the no-fault system than in the at-fault system.

---

<sup>52</sup> This was regardless of whether the IME was hired by the plaintiff or the defense lawyer. IME HCPs did not include, for example, an economist or future cost of care specialist.

#### 4.2.3.2 Influence of Key Factors/ Players on Adversarialness and Cost

Mann-Whitney U tests were used to examine the association of significant key factors/players identified in Table 4-10 to the dependent variables of adversarialness and cost. The results of these are presented in Table 4-11.

**Table 4-11 Key Factors/Players in CA Phase on Adversarialness and Cost**

<i>Grouping Variable</i>	<i>Test Variable</i>	<i>Criterion Variable</i>	<i>N</i>	<i>Mean Rank</i>	<i>U</i>	<i>P Value (2-Tailed Test)</i>
<b>Key Factors</b>						
At-Fault System	Insurance policy limit an issue Insurance policy limit not an issue	Adversarialness	18 17	22.08 13.68	79.5	0.014*
No-Fault System	Insurance policy limit an issue Insurance policy limit not an issue	Adversarialness	1 21	15.5 11.45	9.5	0.909
At-Fault System	Claimant relationship to insured driver No claimant relationship to insured driver	Adversarialness	6 29	17.58 18.09	84.5	0.915
No-Fault System	Claimant relationship to insured driver No claimant relationship to insured driver	Adversarialness	11 11	6.34 16.64	4	0.00003*
At-Fault System	Insurance policy limit an issue Insurance policy limit not an issue	Cost	18 17	23.28 12.41	58	0.001*
No-Fault System	Insurance policy limit an issue Insurance policy limit not an issue	Cost	1 21	22.00 11.00	0.00	0.091
<b>Key Players</b>						
At-Fault System	Family member/friend participation No family member/friend participation	Cost	5 30	25.80 16.70	36	0.069
No-Fault System	Family member/friend participation No family member/friend participation	Cost	11 11	14.27 8.73	30	0.047*

Amongst the key factors, adversarialness was significantly higher in the at-fault system ( $U = 79.5$ ,  $p = 0.014$ ) when the insurance policy limit was an issue, but not in the no-fault system. Adversarialness was significantly lower in the no-fault system ( $U = 4$ ,  $p = 0.00003$ ) when there was a relationship between the claimant and the insured driver. Conversely,

adversarialness was significantly higher in the no-fault system when there was no relationship between the claimant and insured driver.

On the measure of cost, the mean ranks show that cost was significantly higher in the at-fault system ( $U = 58$ ,  $p = 0.001$ ) when the insurance policy limit was an issue. There was no significance around policy limits in the no-fault system.

Two approaches were used to determine differences in adversarialness and cost related to key players. A Mann-Whitney U test was conducted for the key player group of family member/friend, and a regression analysis was conducted on the remainder of key player groups. This was based on criteria set out in the Method chapter (3.11.2), where a Mann-Whitney U test was to be conducted in those cases where a significant relationship between this key player and TBI severity was found.

The results showed that cost was significantly higher in the no-fault system ( $U = 30$ ,  $p = 0.047$ ) when a family member/friend participated in the claims administration phase. This type of participation was primarily to help the claimant access funding for health care benefits (as the degree of impairment prevented the claimant in the no-fault system from participating directly).

Regression analysis findings on the other key players are presented in the Sets of tables 4-12a, for adversarialness, and 4-12b for cost. Note that only the data for the step-wise method regression is presented here. Please refer to Appendix C2.1 and C2.2 for the data on the enter methods for the key players in the CA phase pertaining to both adversarialness and cost, respectively.

### Set of Tables 4-12a Key Players in CA Phase on Adversarialness

Step-Wise (Forward) Method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.610	.372	.361	18.026	.372
2	.706	.498	.479	16.3	.126
3	.747	.558	.533	15.4	.060

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	10586	1	10585.5	32.6	.0000005
	Unexplained (Residual)	17871	55	324.9		
2	Explained (Regression)	14168	2	7084.2	26.8	.000000008
	Unexplained (Residual)	14288	54	264.6		
3	Explained (Regression)	15889	3	5296.5	22.3	.000000002
	Unexplained (Residual)	12567	53	237.1		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	8.00	5.70		1.40	.166
	Plaintiff Lawyer	35.83	6.28	.610	5.71	.0000005
2	(Constant)	6.29	5.16		1.22	.229
	Plaintiff Lawyer	30.62	5.84	.521	5.24	.000003
	Insured Driver	17.12	4.65	.366	3.68	.001
3	(Constant)	6.57	4.89		1.34	.185
	Plaintiff Lawyer	26.58	5.73	.453	4.64	.00002
	Insured Driver	14.27	4.53	.305	3.15	.003
	Surveillance Investigator	12.80	4.75	.266	2.69	.009

Essentially, there were three regression models of key players in the CA phase that were significantly associated with a higher degree of adversarialness. Of the three models, model three, in which the plaintiff lawyer, insured driver, and surveillance investigator participated, demonstrated the most power ( $p = .000000002$ ) compared to models one and two. Model three

had the highest R squared value compared to the other two models. That is, approximately 56% of the variance for adversarialness in the CA phase could be explained when there was participation of a plaintiff lawyer, insured driver, and surveillance investigator as compared to when there was participation of a plaintiff lawyer and insured driver (50% of the variance) or simply a plaintiff lawyer (37% of the variance).

Next, the Set of Tables 4-12b presents the step-wise method regression data for the key player that was significantly associated with cost.

#### **Set of Tables 4-12b Key Players in CA Phase on Cost**

Step-Wise (Forward) Method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.383	.147	.131	.404	.147

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	1.55	1	1.55	9.47	.003
	Unexplained (Residual)	8.98	55	.163		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	.508	.079		6.41	.00000003
	Claimant	-.331	.107	-.383	-3.08	.003

The results showed that cost was significantly lower when a claimant participated in the CA phase. The R squared value indicates that approximately 15% of the variance of cost could be explained by the participation of a claimant in the CA phase. Indirectly, this seems to speak to claimants who negotiated directly with the insurance adjuster in the settlement process (as

opposed to having a plaintiff lawyer participate on their behalf or to claimants who, as a result of a lesser degree of impairment, did not require the assistance of a family member/friend advocating on their behalf).

#### **4.2.4 Dispute Resolution (DR) Phase: Key Factors/Players**

##### **4.2.4.1 Identifying Key Factors/Players in DR Phase**

Table 4-13 presents the findings of the results of the contingency table analysis for key factor and key players in the DR phase.

**Table 4-13 Key Factors/Players by MVA Insurance Compensation Systems**

<i>Test Variable</i>	<i>At-Fault System N = 35</i>	<i>No-Fault System N = 22</i>	<i>P value (Fisher's Exact Test, 2-sided)</i>
<b>Key Factors</b>			
Issue in Dispute	27 (77%)	5 (22.7%)	0.00009*
<b>Parties involved in settlement negotiation</b>			
Negotiated between insured and claimant			
- Settled in CA phase	13 (37.1%)	21 (95.5%)	0.001*
- Settled in DR phase	10 (28.6%)	1 (4.5%)	0.001*
Mediator/judge participation			
- Mediated in DR phase	5 (14.3%)	0 (0.0%)	0.001*
- Arbitrated in DR phase	6 (17.1%)	0 (0.0%)	0.001*
- Court decided in DR phase	1 (2.9%)	0 (0.0%)	0.001*
<b>Key Players</b>			
Adjuster	22 (62.9%)	1 (4.5%)	0.0000007*
Insurer (internal other)	9 (25.7%)	1 (4.5%)	0.071
Insurer (re-insurer)	8 (22.9%)	0 (0.0%)	0.018*
Claimant	3 (8.6%)	0 (0.0%)	0.276
Insured driver (and estate of insured driver)	10 (28.6%)	0 (0.0%)	0.005*
Plaintiff lawyer	22 (62.9%)	1 (4.5%)	0.0000007*
Defence lawyer	22 (62.9%)	1 (4.5%)	0.0000007*
Defence lawyer to the insured driver	4 (11.4%)	0 (0.0%)	0.151
IME HCP for claimant (Plaintiff)	11 (31.4%)	0 (0.0%)	0.002*
IME HCP for insured (defence)	13 (37.1%)	0 (0.0%)	0.001*
Future care specialist	5 (14.3%)	0 (0.0%)	0.145
Economic specialist	5 (14.3%)	0 (0.0%)	0.145
Treating HCP	6 (17.1%)	0 (0.0%)	0.072

<i>Test Variable</i>	<i>At-Fault System N = 35</i>	<i>No-Fault System N = 22</i>	<i>P value (Fisher's Exact Test, 2-sided)</i>
Character witnesses	4 (11.4%)	0 (0.0%)	0.151
Examination for discovery witnesses	20 (57.1%)	0 (0.0%)	0.000003*
Judge/mediators	12 (34.3%)	0 (0.0%)	0.002*

The results of the contingency table analysis showed that all six key factors examined showed a statistically significant difference ( $p = 0.001$ ) between the at-fault and no-fault systems based on the following:

1. Whether or not there was an issue in dispute;
2. Whether a settlement was reached based on negotiations between the insurance adjuster and the claimant (to include defence and plaintiff lawyers) or whether an intervening third party, such as a mediator, had to get involved; and
3. Whether a settlement occurred in the claims administrative (CA) phase or in the dispute resolution (DR) phase between the parties involved in the settlement negotiation.

Due to the nature of the two types of MVA insurance compensation systems, it was not surprising to find that all of the no-fault claims were settled in negotiations between the insurer and the claimant (with the majority of these claims settling in the claims administrative phase of the claims management process). In fact, only one of the no-fault claims was settled using a dispute resolution process. On the other hand, there were significantly more issues in dispute ( $p = 0.00009$ ) in the at-fault system.

In the at-fault system, the majority (65.7%) of the 35 claims were also settled in negotiations between the insurer and the claimant. Nevertheless, a substantial number (34.3%) of these claims required the participation of a mediator/judge as part of a formal DR process. As

to the key players, of the 16 groups involved in the DR phase, there was a significant difference between the at-fault and no-fault systems for nine of these: the insurance adjuster ( $p = 0.0000007$ ), reinsurer ( $p = 0.018$ ), insured driver ( $p = 0.005$ ), plaintiff lawyer ( $p = 0.000007$ ), defence lawyer ( $p = 0.000007$ ), HCP IMEs (further delineated into plaintiff and defence IME;  $p = 0.002$  and  $0.001$ , respectively), witnesses in the examination for discovery (predominantly the claimant and insured driver;  $p = 0.000003$ ), and judge/mediator ( $p = 0.002$ ). Virtually all key players were involved in the at-fault system, and almost none were involved in the no-fault system. Again, this is not particularly surprising, given the purposes of the two types of systems in the Alberta context.

#### 4.2.4.2 Effect of Key Factors/Players in DR Phase on Adversarialness and Cost

The sample size for many of the significant key factors/players being compared to examine their association on measures of adversarialness and cost (in order to better understand the difference found between the two types of MVA insurance compensation systems) were too small to be analysed using either a linear regression analysis or Mann-Whitney U Test. Instead, a descriptive analysis was used to examine the apparent influence of key factors and key players in the DR phase on these measures.

The main purpose of key players in the DR phase was to resolve, as equitably as possible, the disputes that developed between an insurance adjuster and a claimant. Adversarialness was higher on claims files when there were issues in dispute and particularly when, to help settle these issues, a dispute resolution process was implemented. Overall, compared to the no-fault system, there was a higher degree of adversarialness on claims files in the at-fault system because many of the issues in dispute included the use of judicial means to resolve them. There

were five claims files in the no-fault system that had issues in dispute, but only one required a dispute resolution process using judicial means.

For at-fault claims, insurance adjusters often requested the participation of a defence lawyer to help address issues in dispute from a legal perspective. A particular role of a defence lawyer was to assist an insurance adjuster in ascertaining the facts related to contributory negligence/cause-in-fact of the TBI injuries. This was part of a defence claim strategy an insurance adjuster used in their negotiation with a claimant (or with her/his plaintiff lawyer) to help reduce the amount of the final award of damages a claimant could receive in their at-fault claim (if there was evidence to demonstrate that part of the blame for the accident or of the degree of injury sustained could be diverted away from the insured driver and onto another entity, including the claimant). Data gathered by the defense lawyer was used to help offset a plaintiff lawyer's settlement offer demand that typically was in excess of either the amount an insurance adjuster valued the claim to be worth or the insured driver's policy limit. As well as determining the facts of a claim, a defence lawyer often referred to relevant case law from which he or she communicated relevant findings to the insurance adjuster handling a given claim. This type of information allowed an insurance adjuster to determine the likelihood that a court would decide in favour of the plaintiff.

From an insurance adjuster's perspective, claims management efficiency was a factor key in deciding whether to continue to formally dispute a claim as opposed to agreeing to settle the claim for a value that was more in keeping with a claimant's demand. In other words, an insurance adjuster needed to decide whether it was better to settle the claim for a higher cost than the amount as valued by the adjuster in order to avoid: (1) higher administrative costs, such as legal defence costs, to prepare for and attend trial; and (2) the risk of a court deciding upon a

higher settlement amount than what could be negotiated between each side. Even when an insurance adjuster decided to continue to dispute a claim, and therefore instructed a defence lawyer to set a trial date, negotiations to settle a claim between the two parties typically continued.

Cost was higher for claims that settled in the DR phase, compared to those that settled in the CA phase, primarily because an insurance adjuster would increase their counter settlement offer as negotiations proceeded in the hopes of avoiding trial and incurring a greater amount of administrative cost (since this is the cost that was borne by the insurance company and not by the insured driver through the amount in his or her policy limit). Traumatic brain injury severity was also a material factor that influenced cost. This will be discussed next as it relates to TBI severity.

### **4.3 Part III: TBI severity as a Consideration**

A comparison of MVA insurance claims based on TBI severity was carried out as a way to learn more about the differences between the two types of MVA insurance compensation systems. Part III focuses only on the dependent variables of cost and recovery, as these were the two variables that showed a significant difference when comparing TBI severity.

#### ***4.3.1 Identifying Key Factors/Players***

As described in the Methods chapter, an initial contingency table analysis, similar to that used in Part II, was used to identify significant key factors and key players. A subsequent analysis was made to determine whether these key factors/key players influenced the two dependent variables. Table 4-14 presents the results of the contingency table analysis.

**Table 4-14 Key Factors/Players by TBI Severity**

<i>Test Variable</i>	<i>Mild TBI N = 24</i>	<i>Moderate/Severe TBI N = 33</i>	<i>P value (Fisher's Exact Test, 2-sided)</i>			
<b>Key Factors</b>						
<b>Type of health care accessed</b>						
Emergency medical care						
- Ambulance at scene	20 (83.3%)	33 (100.0%)	0.027*			
- Emergency care facility	18 (75.0%)	33 (100.0%)	0.004*			
ICU (hospital-based inpatient care)						
- Observation only (uni-disciplinary care)	0 (0.0%)	4(12.1%)	0.130			
- Multi-disciplinary care	4 (16.7%)	29 (87.9%)	0.00000006*			
- Radiological evidence of skull/brain injury	4 (16.7%)	27 (81.8%)	0.00003*			
Neuro/TBI Rehabilitation (hospital-based inpatient care)	0 (0.0%)	11 (33.3%)	0.001*			
Average length of hospital-based inpatient Care <sup>53</sup>	6.3 days	76.7 days	0.00003*			
Community-based care						
- Hospital-based outpatient neuro/TBI follow-up/assessment	2 (8.3%)	12 (36.4%)	0.027*			
- Specialized voc/academic rehabilitation	0 (0.0%)	6 (18.2%)	0.034*			
- Long-term care	0 (0.0%)	5 (15.2%)	0.067			
<b>Primary treatment: TBI</b>						
Hospital-based inpatient care	3 (12.5%)	28 (84.9%)	0.00000007*			
Community-based care	2 (8.3%)	19 (57.6%)	0.0002*			
<b>Primary treatment: other injury</b>						
Hospital-based inpatient care	1 (4.2%)	5 (15.2%)	0.384			
Community-based care	10 (41.7%)	26 (78.8%)	0.143			
<b>Discrepant health information</b>						
Pre-accident health an issue	15 (62.5%)	8 (24.2%)	0.006*			
Change in TBI diagnosis	14 (58%)	17 (52%)	0.788			
<b>Key Players</b>						
Family physician	16 (66.7%)	13 (39.4%)	0.061			
Neurologist	11 (45.8%)	4 (12.1%)	0.006*			
Psychologist/Psychiatrist	5 (20.8%)	12 (36.4%)	0.251			
Rehabilitation physician	3 (12.5%)	11 (33.3%)	0.118			
Case manager	3 (12.5%)	11 (33.3%)	0.118			

<sup>53</sup> Average length of hospital-based inpatient care is included as a subset of the type of health care accessed. It is a continuous variable compared to the other variables in this group, which are discrete.

The following types of health care accessed were significantly different between mild TBI and moderate/severe TBI groups:

- Ambulance attendance at the scene of the MVA ( $p = 0.027$ );
- Attendance at an emergency facility ( $p = 0.004$ );
- Receipt of multidisciplinary treatment as part of ICU care ( $p = 0.00000006$ );
- Hospital-based inpatient neuro/TBI rehabilitation ( $p = 0.00003$ );
- Hospital-based inpatient length of stay ( $p = 0.00003$ );
- Hospital-based outpatient care, as part of the community-based care ( $p = 0.027$ ); and
- Specialized vocational/academic rehabilitation, as part of the community-based care ( $p = 0.034$ )

As might be expected, due to the severity of their injuries, claimants in the moderate/severe TBI group accessed a greater amount of health care goods and services than those in the mild TBI group for both hospital-based inpatient care and community-based care.

Primary treatment for a TBI for both hospital-based inpatient care and community-based care was also significantly different for the two groups ( $p = 0.00000007$  and  $p = 0.0002$ , respectively). On admission to hospital-based inpatient and/or community-based care, the routine practice was to assign a primary diagnosis. Presumably, this diagnosis was related to what was perceived as the most immediate or primary treatment required, regardless of whether the claimant had sustained multiple injuries following the MVA. While in hospital, some claimants received a primary diagnosis of a TBI and received treatment for it. Others were diagnosed with other conditions (e.g. leg fracture) that were treated, but where the TBI was not addressed.

Of the claimants in the mild TBI group, only three (12.5%) received a primary diagnosis of a TBI as part of their hospital-based inpatient treatment and two (8.3%) received a primary diagnosis of a TBI as part of their community-based treatment. In contrast, the moderate/severe TBI group consisting of 28 (84.9%) of the claimants received a primary diagnosis for a TBI as part of their hospital-based inpatient care and 19 (57.6%) received a primary diagnosis of TBI as part of their community-based care. This difference between TBI severity groups, on primary treatment for a TBI, was significant for both hospital-based inpatient care ( $p = 0.0000007$ ) and community-based care ( $p = 0.0002$ ). Overall, compared to when the primary diagnosis was another injury sustained in the MVA, claimants accessed more hospital-based inpatient care and community-based care when the primary diagnosis was a TBI.

The remaining significant key factor—of a claimant’s pre-accident health being an issue—pertained more to claimants who sustained mild TBI as compared to claimants who sustained moderate/severe TBI ( $p = 0.006$ ). When a claimant’s health care records demonstrated pre-accident health factors that were the same or similar to the injury or symptoms being claimed in the MVA, then these were more likely to be an issue for an insurance adjuster handling a mild TBI claim than for an insurance adjuster handling a claim for moderate/severe TBI.

Five types of community-based health care providers (HCPs) were considered to be key players in the assessment and treatment of claimants with a TBI. These key players were: family physicians, neurologists, psychiatrist/psychologists, rehabilitation physicians, and case managers. Of these, the only key player showing a statistically significant difference between mild and moderate/Severe TBI groups were neurologists ( $p = .006$ ), with significantly more claimants in the mild TBI group consulting a neurologist than claimants in the moderate/severe TBI group. In the mild TBI group, 11 of the 24 claimants (46%) saw a neurologist as part of their community-

based care compared to four of the 33 claimants (12%) in the moderate/severe TBI group. The primary reason for consulting with a neurologist was to investigate complaints of symptoms such as headaches and dizziness, these being two of the most common features used to describe mild TBI and for which family physicians believed needed further investigation by a specialist. While symptoms such as headaches and dizziness were not uncommon features of claimants with moderate/severe TBI, family physicians were typically not involved in making referrals to a neurologist because those claimants were already being assessed or treated by specialists (such as a psychiatrist, psychologist or rehabilitation physician) as part of their post-hospital discharge follow-up care.

Most relevant here, is that the majority of these claimants, most of whom were in the mild TBI group, accessed a neurologist for a one-time assessment instead of receiving ongoing consultation. For those claimants who only obtained a one-time assessment, the neurologists were of the general view that their symptoms would resolve naturally in time and therefore no further consultations were required. For claimants who saw a neurologist more than once, the neurologists were of the general view that either ongoing observation or treatment was required, and therefore follow-up consultations were needed. Table 4-15 outlines the differences between mild and moderate/TBI based on neurologist participation.

Nine (82.0%) of the 11 claimants in the mild TBI group were seen by a neurologist once, while two of them (8.0%) consulted a neurologist at least twice. Of the four claimants in the moderate/severe TBI group who consulted a neurologist, two (50%) were seen for a one-time assessment and two (50%) were seen at least twice.

**Table 4-15 Neurologists in Community-based Care by TBI Injury Severity**

Key HCP Group	Mild TBI (N = 11 of 24)		Moderate/severe TBI (N = 4 of 33)	
	Primary Purpose			
	One-Time Assessment	Ongoing Participation	One-Time Assessment	Ongoing Participation
<b>Neurologist</b>	9 (82.0%)	2 (8.0%)	2 (50.0%)	2 (50.0%)

#### 4.3.1.1 Effect of Key Factors/Players by TBI Severity, Cost and Recovery

Using the data as presented in Table 4-14, a step-wise regression analysis was conducted to determine if there was any significant association between the type of care received and the dependent measure of cost in the MR phase. Again, due to the amount of data related to both enter and step-wise regression methods, only the step-wise data is presented in the Set of Tables 4-16a. Appendix C3.1 provides the data pertaining to the enter method for this regression analysis.

#### **Set of Tables 4-16a Type of Care and Cost**

##### Step-Wise (Forward) Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.487	.237	.223	.382	.237

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	2.49	1	2.49	17.08	.0001
	Unexplained (Residual)	8.03	55	.146		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	.083	.078		1.06	.293
	ICU Multidisciplinary inpatient care	.424	.103	.487	4.13	.0001

The findings in the Set of Tables 4-16a show a significant association ( $p = 0.0001$ ) between cost and hospital-based inpatient, multidisciplinary ICU care received. Based on the R squared value for cost, 24% of the variance could be explained by a claimant's admittance to ICU for multidisciplinary care.

Next, the Set of Tables 4-16b shows a summary of the data pertaining to the step-wise regression data for the primary diagnosis the claimant received a part of their hospital-based inpatient care and or community-based care and cost. Please refer to Appendix C3.2 for the date pertaining to the enter method regression analysis.

As a reminder, note that a claimant could have received either a primary diagnosis for a TBI sustained in the motor vehicle accident (MVA) or a primary diagnosis for another injury sustained in the MVA (for example, a fractured leg). Additionally, a claimant could have received a primary diagnosis as part of his or her hospital-based inpatient care and community-based care (if he or she was treated in both types of settings), or for either hospital-based inpatient care or community-based care (if he or she was treated in only one type of setting).

### **Set of Tables 4-16b Primary Diagnosis and Cost**

Step-Wise (Forward) Method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.452	.205	.190	.390	.205
2	.512	.262	.234	.379	.057

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	2.15	1	2.153	14.139	.0004
	Unexplained (Residual)	8.37	55	.152		
2	Explained (Regression)	2.76	2	1.378	9.575	.0003
	Unexplained (Residual)	7.77	54	.144		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	.180	.065		2.764	.008
	Community-based primary diagnosis of TBI	.403	.107	.452	3.760	.0004
2	(Constant)	.097	.075		1.294	.201
	Community-based primary diagnosis of TBI	.261	.125	.293	2.089	.041
	Hospital-based primary diagnosis of TBI	.248	.121	.287	2.047	.046

Essentially, the regression analysis produced two models for primary diagnosis and cost.

The results of the second model showed a significant association between cost and a primary diagnosis of TBI, both as part of a claimant's community-based care and hospital-based inpatient care. This is compared to the first model which showed a significant association between cost and a primary diagnosis of TBI for claimants who received a TBI diagnosis in only community-based care. Pertaining to primary diagnosis and cost, the second model is more powerful ( $p = 0.0003$ ) in comparison to the first model, given that the R squared value is higher in model 2 compared to the R squared value in model 1. Looking at the R squared value, 26% of the variance for cost is explained when a claimant received a primary diagnosis of TBI for both community-based and hospital-based inpatient care, whereas only 20.5% of the variance for cost can be explained by the association of a primary diagnosis of a TBI in the community-based care, as presented in the R squared value for the first model. Note here that the measure of cost

is based on the claims settlement payout and does not include the cost of care for hospital-based inpatient or outpatient hospital-based treatment (as these costs were covered by the government-funded programs within Alberta Health Services<sup>54</sup> and most claims files did not have documentation showing these costs).

A second step-wise regression analysis was conducted to examine significant key factors on the dependent measure of recovery. The Set of Tables 4-17a presents the findings for the type of care provided by recovery. Please refer to Appendix C3.3 for the data pertaining to the enter method for this regression analysis.

#### **Set of Tables 4-17a Type of Care and Recovery**

##### **Step-Wise (Forward) Model**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.500	.250	.236	250.7	.250
2	.555	.308	.282	243.1	.058
3	.632	.399	.365	228.6	.091

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	1151843	1	1151843.3	18.33	.00007
	Unexplained (Residual)	3456115	55	62838.4		
2	Explained (Regression)	1417359	2	708679.3	11.99	.00005
	Unexplained (Residual)	3190599	54	59085.2		
3	Explained (Regression)	1838785	3	612928.3	11.73	.000005
	Unexplained (Residual)	2769173	53	52248.5		

---

<sup>54</sup> The private insurers of Alberta pay Alberta Health Services a yearly, one-lump sum of approximately \$90 million in subrogation fees to reimburse the government funded hospital-based health services for claimants who have sustained injury in an MVA and which access these services.

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	293.8	38.09		7.71	2.5E-10
	Hospital Length of Stay (LOS) <sup>55</sup>	1.70	.396	.500	4.28	.00007
2	(Constant)	222.4	49.98		4.45	.00004
	Hospital LOS	1.41	.407	.417	3.48	.001
	Radiological evidence of skull/brain injury	146.3	69.02	.254	2.12	.039
3	(Constant)	224.3	47.01		4.77	.00001
	Hospital LOS	1.29	.385	.379	3.34	.002
	Radiological evidence of skull/brain injury	207.1	68.3	.360	3.03	.004
	Community-based Specialized Voc/Academic care	-295.0	103.9	-.318	-2.84	.006

Essentially, the regression analysis yielded three models for type of care and recovery that were significantly associated with a longer degree of recovery. Model three was more powerful ( $p= 0.000005$ ) than the other two models. Looking at the R squared value, nearly 40% of the variance of recovery could be explained by a claimant having had a hospital length of stay (LOS) of two days or more, having demonstrated radiological evidence of a skull/brain injury, and having received community-based specialized/academic care following a discharge from hospital. This is compared to: (1) the second model, in which approximately 31% of the variance of recovery could be explained by a LOS of two days or more and radiological evidence of a brain/skull fracture; and (2) the first model, in which 25% of the variance of recovery could be explained by a claimant having a hospital LOS of two days or more. Claimants who had a longer length of hospital stay were those who had sustained more severe TBI (as compared to claimants who sustained mild or moderate TBI) and therefore had a longer length of recovery.

---

<sup>55</sup> Hospital length of stay of two days or more as factor was indicative of receiving care in a hospital-based setting as opposed to simply being observed.

Next, the Set of Tables 4-17b presents data for the step-wise (forward) method regression analysis for primary diagnosis and recovery. Please refer to Appendix C3.4 for the enter method regression data.

### **Set of Tables 4-17b Primary Diagnosis and Recovery**

#### **Step-Wise (Forward) Method**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.430	.185	.170	261.294	.185

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	852854	1	852854	12.5	.001
	Unexplained (Residual)	3755104	55	68275		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	280.3	43.5		6.44	.00000003
	Community-based primary diagnosis of TBI	253.6	71.7	.430	3.53	.001

The results showed a significant association ( $p = 0.001$ ) between a longer recovery and when the primary diagnosis was for a TBI as part of community-based care. The R square value showed that approximately 19% of the variance for a longer recovery could be explained when a claimant received a primary diagnosis for TBI as part of their community-based care.

#### **4.3.2 Additional Analyses of Factors Influencing Cost by TBI Severity**

A number of other factors influencing costs related to TBI severity were examined. The first compared cost between the mild TBI and moderate/severity TBI groups when a claimant was related to the insured driver, and when the claimant's pre-accident health was an issue. Since these two factors also showed a significant difference when compared to the two MVA

insurance compensation systems, Mann-Whitney U tests were conducted. The results are summarized in Table 4-18.

**Table 4-18 Key Factors by TBI Severity**

<i>Grouping Variable</i>	<i>Test Variable</i>	<i>Criterion Variable</i>	<i>N</i>	<i>Mean Rank</i>	<i>U</i>	<i>P Value (2-Tailed Test)</i>
<b>Key Factors</b>						
Mild TBI	Pre-accident health an issue	Cost	15	16.27	11	0.0003*
	Pre-accident health not an issue		9	6.22		
Moderate/ Severe TBI	Pre-accident health an issue	Cost	8	19.63	79	0.397
	Pre-accident health not an issue		25	16.16		
Mild TBI	Claimant relationship to insured driver	Cost	3	5	9	0.052*
	No claimant relationship to insured		21	13.57		
Moderate/ Severe TBI	Claimant relationship to insured driver	Cost	14	19.07	104	0.304
	No claimant relationship to insured		19	15.47		

When a claimant's pre-accident health was an issue, the mean ranks showed that cost was significantly higher ( $p = 0.0003$ ) for the mild TBI group in comparison to when a claimant's pre-accident health was not an issue. No significant difference was found for the moderate/severe TBI group when pre-accident health was an issue.

The other factor, claimant relationship to insured driver, also seemed related to cost for the mild TBI group. The mean ranks showed that cost was close to being significantly higher ( $p = 0.052$ ) for claimants in the mild TBI when they were not related to the insured driver (as compared to when they were related).

A second analysis involved cost related to settlement negotiations between an insurance adjuster (or defence lawyer as a representative to the insurance company) on the defense side and a claimant (or plaintiff lawyer as a representative to the claimant) on the plaintiff side. The

analysis compared the average cost to settle a claim in both TBI severity groups. This comparison was based on whether a claim was settled in negotiation between the defence side and the plaintiff side, or settled using an intervening third party, such as a mediator. As a reference point, average cost to settle a claim in the CA phase was included in the analysis. Due to the small sample size in some cells, probability values were not calculated. The data is summarized in Table 4-19.

**Table 4-19 Average Settlement Cost for At-Fault Claims by TBI Severity**

<i>Settlement Negotiated Via Two-Party or with Intermediary</i>	<i>Settlement by Claims Management Process</i>	<i>Average Cost for Mild TBI (N =16)</i>	<i>Average Cost for Mod / Severe TBI (N =19)</i>
Negotiated between Insurer/defence lawyer and Claimant/plaintiff lawyer	Settled in CA phase	\$84,503	\$469,469
	Settled in DR phase	\$180,226	\$547,594
Mediator/judge participation	Mediated in DR phase	\$159,679 (4)	\$895,192 (8)
	Arbitrated in DR phase		
	Court decided in DR phase		

Of note is the incremental increase in settlement average payouts for moderate/severe TBI claimants, depending on which phase of the claims management process the settlement occurred. The lowest average payout of \$469,469 occurred when the claim was negotiated in the CA phase. When the claim was settled in the DR phase, the average payout was \$547,594, which was about 20% higher than the cost to settle a claim when it was negotiated in the CA phase. The highest payout occurred in the DR phase when settled by an intervening third party, with the highest average payout of \$895,192. Note that eight of the 19 claimants (42%) in the moderate/severe TBI group had an intervening third party help settle their claim.

The trend was different in the mild TBI group. As in the moderate/severe TBI group, settlement was lowest in the CA phase, with an average payout of \$84,503. Awards also rose

when a claim was settled in negotiations in the DR phase, with an average payout of \$180,226 (in this case, without the intervention of a third party). The payout for claimants in the mild TBI group, however, dropped to \$159,679 in the DR phase when an intervening third party was used to help negotiate the settlement.

A third factor of interest pertained to claims management efficiency. Table 4-20 shows the difference in plaintiffs' Bills of Cost between the mild TBI and moderate/severe TBI groups.

**Table 4-20 Average Bill of Cost for Plaintiff Lawyer by TBI Severity**

<i>Settlement Negotiated Via Two-Party or with Intermediary</i>	<i>Settlement by Claims Management Process</i>	<i>Cost for Mild TBI (N = 15)</i>	<i>Cost for Mod / Severe TBI (N = 18)</i>
Negotiated between Insurer/defence lawyer and claimant/plaintiff lawyer	Settled in CA phase	\$8,458	\$10,044
	Settled in DR phase	\$36,565	\$34,238
Mediator/judge participation	Mediated in DR phase	\$19,530	\$41,009
	Arbitrated in DR phase		
	Court Decided in DR phase		

For the group of claimants with moderate/severe TBI, the general pattern of the average cost that a plaintiff lawyer incurred roughly followed the pattern of settlement costs set out in Table 4-19 (with the costs rising as settlement negotiations continued from the CA to the DR phase). As one would suspect, the highest average cost incurred by a plaintiff lawyer was when there was participation of an intervening third-party, such as mediator or judge, in the settlement process for claimants with moderate/severe TBI. However the pattern was different for the group with mild TBI. The highest average cost incurred by a plaintiff lawyer (as demonstrated by his or her bill of cost) was for claims files that settled through negotiations between the two parties (insurance adjuster/defence lawyer and claimant/plaintiff lawyer) in the DR phase and not

---

<sup>56</sup> Two claims not included because Bill of Cost was not provided

the costs associated with a claim being mediated or arbitrated. What is notable here is that the second largest bill of cost, across both TBI groups, was that associated with plaintiff lawyers in the DR phase who were arguing for claimants with mild TBI. The majority of this cost was to pay for the medico-legal health care professional reports obtained in the community-based phase of a claimant's MR phase (a private fee for service). These reports, of course, are those which a plaintiff lawyer used as evidence to support a claim for TBI in lieu of limited to no hospital-based inpatient health care records of treatment for a TBI (of which the cost for these medical and rehabilitation expenses were borne by the public health care system).

#### **4.4 Part IV: Summary of Results**

The analyses in Part I indicated that there was greater adversarialness and more cost involved in the at-fault system when compared to the no-fault system. Measures of responsiveness and recovery showed no significant difference and so were set aside. A second analysis found that there was significantly greater cost and longer recovery for claimants with moderate/severe TBI as compared with Mild TBI claimants.

In Part II, statistical and descriptive analyses were used to identify which key factors and key players were significantly associated with adversarialness and cost. Key factors that were significantly related to a higher degree of adversarialness were:

- A claimant's contributory negligence/cause-in-fact of a claimant's degree of injury (CN/Cause);
- Discrepant health information pertaining to the issue of a claimant's pre-accident health information or a change in TBI diagnosis to a more severe level; and
- An initial claimed amount, which was near to or in excess of an insured driver's policy limit (Insurance Policy Limit).

Each of these key factors, significantly associated with greater adversarialness, occurred in a different phase of the claims management process. Contributory Negligence/Cause was specific to the accident/fault (AF) investigation phase, discrepant health information was specific to the medical/rehabilitation (MR) phase, and the issue of insurance policy limits was specific to the claims administration (CA) phase. This point is relevant as it demonstrated that: 1) not all aspects of the claims management process were necessarily adversarial; and 2) adversarialness could be associated with variety of factors. That is, a higher degree of adversarialness could have emerged at different times during the claim management process and for different reasons. Also, the fact these factors were more prevalent in the at-fault system helped explain the higher level of adversarialness in that system as compared to the no-fault system.

The key factors contributing to a significantly higher amount of cost (i.e. payout to claimant) in the at-fault system were a claimant's length of hospital stay (LOS), being two days or more, and when an insurance policy limit was an issue. Longer LOS was indicative of a greater degree of TBI severity and, in turn, a greater degree of TBI severity translated into higher settlement amounts in the at-fault system. Additionally, while a greater degree of TBI severity was also associated with higher cost in the no-fault system, only claimants with severe TBI accessed the full amount of funding available in this type of system. Note that the majority of these claimants were liable for the accident and therefore were not eligible to collect in an at-fault MVA insurance compensation system claim.

Insurance policy limits covering a claimant's bodily injury loss were not an issue in the no-fault system because the proscribed rules that govern the amount of funds available limit what a claimant is eligible to receive, regardless of ongoing need. This was not the case for at-fault claims. In the at-fault system a claimant suing an at-fault party could claim (and receive) any

amount, regardless of whether it exceeded the policy limit. All settlement costs were therefore negotiated. However, when insurance policy limits were an issue, whether the claimed amount was based on accurate medical/rehabilitation (MR) facts (as outlined in the health care records) or based on conjecture by an HCP providing a medico-legal report, the goal for the insurance adjuster (and for many of the plaintiff lawyers as well) was to get a claimant to agree to a negotiated settlement, ideally based on the merits of the MR evidence, but with a view to have these settled within the policy limit. This was because any amount in excess of the policy limit could theoretically be shifted from the insurance company to another entity and therefore likely not realized.

On claims files in which adversarialness and cost factors were present, there was greater participation on the part of defence lawyers to address and settle issues in dispute. This occurred most often in the at-fault claims files. Since blameworthiness of either an insured driver or claimant was not part of the no-fault system, defence lawyer (and plaintiff lawyer) participation pertaining to these factors was not necessary.

It is interesting to note that adversarialness was significantly higher on no-fault claims files when there was direct participation of either a community-based family physician or case manager in particular. It seems that participation of family physicians or case manager was indicative of a claims file having discrepant health information. This seems to arise when an insurance adjuster in the no-fault system requested additional health information, followed by request for an opinion by the case manager, as to a claimant's need for ongoing benefits.

Significantly higher cost was also associated with family member/friend participation in the no-fault system. This situation usually arose when the claimant had sustained a severe TBI and required assistance to help them manage the administrative aspects of their no-fault claim.

These were also claimants who were typically liable for the MVA and who were therefore, not represented by a plaintiff lawyer.

Adversarialness and cost were also related to the management of MVA insurance claims. Efficient claims management was a major goal for insurance adjusters in the CA phase, especially for claims that had an initial demand that was in excess of an insured driver's policy limit. Their goal was to settle these claims within the policy limit, and ideally the amount was based on unequivocal evidence that a claimant had sustained the injuries being declared. When an initial claims demand was in excess of an insured driver's policy limit and or the evidence did not support the claim, an insurance adjuster sought assistance from a defence lawyer and a surveillance investigator to help ascertain the facts necessary to adjust a claim. An insured driver and reinsurer also participated on these types of claims, primarily to ensure that their interests were being protected. The insurance adjuster's objective was to resolve any issues in dispute and negotiate a settlement directly with the claimant in the CA phase of the claims management process (as opposed to having to settle a claim in the DR phase, wherein the insurance company would incur higher administrative costs).

Most claims were settled via negotiations between the insurance adjuster and claimant (with the use of lawyers on each side of the dispute acting as representatives) in the CA phase. When negotiations failed, a third party (such as a mediator and/or arbitrator or, in one case, a trial judge) participated in the DR phase to resolve the issues and negotiate a settlement/render a judgement. Adversarialness was higher on claims files when a mediator, arbitrator, or judge was brought in to assist with resolving issues in dispute. Adversarialness was higher for claims in which an independent medical examiner (IME) participated, regardless of which side had hired them.

A factor that appeared to significantly influence a lower level of adversarialness was the presence of a relationship between the claimant and the insured driver. There were more claims in the no-fault system compared to the at-fault system for which there was a relationship between a claimant and an insured driver. This result, in and of itself, is not surprising given that no-fault insurance is considered first-party insurance, wherein the insurer takes care of their own insured. But at-fault insurance is considered third-party insurance, wherein the insurer compensates a third-party to the insurance contract, regardless if this third-party is related or not. It was surprising to find that this was a factor that was significantly associated with higher costs for claimants who had sustained mild TBI.

Of additional interest pertaining to TBI severity was the relative contribution this factor had on cost as compared to the design of the MVA insurance compensation system. A claimant's degree of TBI severity (mild and moderate/severe) had approximately two and a half times greater effect on cost compared to the effect of the type of MVA insurance compensation system type (no-fault or at-fault). The results also demonstrate that claimants in the moderate/severe TBI group had higher costs in both the no-fault and at-fault systems when compared to claimants in the mild TBI groups for these two systems. The average cost was substantially higher for both the mild TBI group and moderate/severe TBI group in the at-fault system, however, in comparison to the relatively small amount of costs that each of these groups incurred in the no-fault system.

## **Chapter Five: Discussion**

### **5.1 Introduction**

The main reason for this study was to gain an understanding of how the design of a motor vehicle accident (MVA) insurance compensation system affects access to benefits for claimants who have sustained a traumatic brain injury (TBI) in an MVA, and how this then affects recovery. As summarized at the end of the Results chapter, the only significant differences in dependent measures were found between at-fault and no-fault MVA insurance compensation systems on measures of adversarialness and cost, both of which were significantly higher in the at-fault system compared to the no-fault system. Also, claimants with moderate/severe TBI had significantly higher rates of cost and recovery times than claimants with mild TBI. While these findings are of interest in their own right, they are best understood by subsequent analyses. I will first address the key factors and key players that influenced the MVA insurance claims management process (with particular focus on adversarialness and cost), and then take up the question of how TBI severity affects cost in each of the MVA systems and, in turn, what can be learned about how such differences affect recovery.

### **5.2 Context of Findings**

Before considering the results, I want to expand further on the context of this study and its findings. From the literature reviewed, it appears that this study is the first of its kind in a number of ways. According to my research, it is the first to examine at-fault and no-fault MVA insurance compensation systems on measures such as cost, adversarialness, responsiveness, and recovery in each of four different phases of the MVA claims management process. While the four phases themselves—accident/fault investigation (AF), medical/rehabilitation (MR), claims

administration (CA), and dispute resolution (DR)—are not new, it is an innovative idea to examine each in terms of their function on the dependent variables, and then linking these findings to better understand what happens during the claims management process. In this regard, the research breaks new ground by conceptualizing the claims management process as occurring in overlapping but sequential phases, each of which involve different key factors in specific phases of the claims management process and key players who participate in these specific phases to address these issues. This study has demonstrated the utility of this four-phased claims management process, especially in its use to present data in a simplified manner in order to better understand and make sense of a complex system.

It is important to mention that not all the key factors and key players identified in the data gathering process and initially analysed were presented as part of the findings for this study. Two examples of possible key factors initially identified and analysed but not presented in the findings were as follows: (1) whether or not an at-fault insured driver had been charged with a traffic violation (such as speeding) or with criminal misconduct (such as driving while under the influence of drugs or alcohol); and (2) whether or not the accident occurred in another state or provincial jurisdiction, other than the province of Alberta. In both instances, the frequency of occurrence was so small that there was insufficient data for analysis and therefore no reason to believe they had a systemic influence.

Similarly, two examples of possible key players were: (1) whether or not an insurance broker participated in relaying relevant information to the insurance adjuster; and, (2) whether or not health care professionals, such as an occupational therapist, physiotherapist, or a nurse, provided treatment. Again, only a few files identified these as potential “players,” and so they were ignored as part of this study. For instance, while the participation of a physiotherapist was

relevant for all claimants who received this kind of health care treatment, the services provided by physiotherapists typically were part of the claims management process and overseen by physicians (such as a rehabilitation physician or family physicians) who had a greater degree of influence of the health care management of a claimant. Consequently, the “key player” in these cases was the physician.

It also appears that this study is the first of its kind to use empirical measures of adversarialness, cost, responsiveness and recovery to examine and compare the differences between an at-fault and no-fault MVA insurance compensation system as these relate to access to health care benefits for claims involving traumatic brain injury (TBI). Previous analyses have made extensive use of cost data, and made reference to constructs similar to adversarialness and responsiveness, but the latter factors have not been systematically measured. Therefore, this research also breaks new ground by operationalizing the constructs of adversarialness and responsiveness. By doing so, I have been able to shed new light on reasons for the significant differences found between the two types of MVA insurance compensation systems pertaining to these dependent measures.

### **5.3 Differences Between MVA Systems on Adversarialness**

Three key factors were associated with a higher level of adversarialness in the at-fault MVA insurance compensation system; one key factor was associated with a low level of adversarialness. The key factor that was associated with a lower level of adversarialness was when a claimant was related to the insured driver who was at-fault. The three that were associated with a higher level of adversarialness were:

- Discrepant health information contained in a claims files, namely (a) whether a claimant’s pre-accident health factors became an issue, and (b) when there was a change

in TBI diagnosis from a less severe to more severe injury (see results chapter section

4.2.2.2, Table 4-7);

- When contributory negligence on the part of a claimant and /or cause-in-fact (cause) of the TBI severity became a claim of defence by an insurance adjuster or defence lawyer (see results chapter section 4.2.1.2, Set of Tables 4-5a and 4-5b); and
- When an initial demand, as per a plaintiff's claim, was near to or in excess of an insured driver's insurance policy limit (see results chapter section in 4.2.3.2, Table 4-11).

Each of these four key factors and their association to adversarialness will be discussed separately. The first, discrepant health information, created the most tension between a claimant and an insurance adjuster. Therefore, the discussion begins with this factor, and is discussed in more detail than the others.

### ***5.3.1 Discrepant Health Information in Claims Files***

Adversarialness was higher when an adjuster found that a claimant's pre-accident health information demonstrated the same or similar injuries/symptoms as those being claimed to be caused by the MVA, or when a TBI diagnosis changed from a less severe to a more severe level during the course of the MVA claims management process. In both the at-fault and no-fault systems, if insurance adjusters suspected pre-accident health factors were at play or a claimant was trying to build a case of TBI, they began to question the validity of a claim (either in terms of whether the MVA had materially contributed to the injuries being claimed or, if it had, whether the severity of the injuries being claimed were the result of the MVA). Once the validity of a claim was in question, then an insurance adjuster sought to obtain a more detailed verification of a claim. This action tended to increase the degree of adversarialness. As the

results indicate, however, this issue was more prevalent in the at-fault system than in the no-fault system.

#### 5.3.1.1 Discrepant Health Information in No-Fault System

In the no-fault system it was standard practice for an insurance adjuster to accept the health information provided on the standard no-fault accident benefits forms at face value. In the majority of no-fault claims files, pre-accident factors were either not listed on these forms or, if they were, they were described as irrelevant by the claimant and/or health care professional. While there may have been pre-accident health factors that could have been considered as materially contributing to a claimant's injuries, because health care records were not requested as a matter of standard procedure, discrepant health information did not come to light in such cases.

Additionally, a change in TBI diagnosis was not uncommon in no-fault claims files, but the majority of these particular claimants did not request any additional treatment and insurance adjusters were not placed in position of having to address additional funding matters. As such, a change in TBI diagnosis did not appear to be a relevant factor in the no-fault claims because this change to a higher degree of injury severity did not translate to higher payouts of accident benefits in this type of system. If, as a claim proceeded and discrepancies began to emerge—for example, whether or not a claimant had returned to work (or could return to work based on the health information being provided)<sup>57</sup>—then an insurance adjuster would begin to question the validity of the claim. It was then that an adjuster typically requested additional health

---

<sup>57</sup> As was standard procedure, no-fault insurance adjusters requested from a claimant's treating health care professional a progress report (AB-3 form), approximately every three months for claimants whose return to work status was uncertain. For a detailed description of the type of information requested for this form and other no-fault accident benefits claims forms please refer to the following website: <http://www.finance.alberta.ca/search/query.aspx?siteSearch=www.finance.alberta.ca&requiredFields=&partialFields=&q=medical+forms> [date last accessed November 12, 2012]

information from such sources as a claimant's pre-accident health records, an independent medical examination, and/or a review of a claimant's medical/rehabilitation information by the rehabilitation specialist internal to the insurance company. When this occurred, there was increased tension between the claimant and insurance adjuster.

It also was observed that when these types of requests were made, few as they were, a no-fault claims file was typically closed—either due to non-compliance by a claimant to furnish the requested information or from a medical opinion indicating a claimant could return to work. Of the few claims files closed in this manner, only one claimant disputed the closure. Therefore, one might conclude that the degree of adversarialness on these types of no-fault claims files was quelled. In sum, while discrepant health information was an issue on a few no-fault claims files, overall, because an insurance adjuster's request for additional health information resulted in no-fault claims files being closed, this key factor did not contribute much to adversarialness.

#### 5.3.1.2 Discrepant Health Information in At-Fault System

In contrast, if there was discrepant health information in at-fault system claims files, and if insurance adjusters were of the view that this was a material factor in need of attention, then the insurance adjuster typically set about to defend the claim by seeking additional health information on a claimant's pre-accident health and/or from additional medical examinations. As already described, this action contributed to greater tension between claimant and adjuster. It was necessary for an insurance adjuster in the at-fault system to defend an at-fault claim, because the majority of at-fault claims had been filed in court by or on behalf of the claimant. Therefore, the claimant was in charge of whether or not he or she discontinued their at-fault claim in court and, in this study, none of the claims files were withdrawn until a settlement was paid. Since each side was choosing to take a stance and dispute the issue of discrepant health information,

adversarialness was higher in the at-fault system compared to the no-fault system. In contrast, discrepant health information was disputed less in the no-fault claims, therefore adversarialness was lower for this key factor in this type of system.

From an at-fault system insurance adjuster's perspective, there were three main issues (beyond the simple request for pre-accident health information) that increased tension and adversarialness between him or her and a claimant. The first issue was a lack of timely disclosure of a claimant's health care records (pre and post-accident). It was not uncommon for a plaintiff lawyer to take months, or sometimes years, to produce the health care records, even when the insurance adjuster made repeated requests. In some cases, an insurance adjuster/defence lawyer had to threaten legal action in order to obtain this information.

The second issue was linked to a claimant's pre-accident health care records demonstrating injuries/symptoms that were the same or similar to the ones being claimed. Once health care records were disclosed, adversarialness tended to be higher when an adjuster was of the view that the pre-accident health factors needed to be considered further as to their material contribution to the injuries being claimed. Adversarialness was especially high on claims files when one or more of the treating health care professionals (HCPs) knew, or ought to have known,<sup>58</sup> about the health care factors early on in the claim but disregarded or down-played their relevance as part of their assessment/treatment of a claimant (forming part of the discrepant health information).

The final issue that influenced adversarialness was a change of TBI diagnosis from less to a more severe degree by a health care practitioner who conducted a one-time assessment,

---

<sup>58</sup> Knowing about a claimant's pre-accident factors in this context meant that a treating HCP had these health care records available to them or had the capacity to request them.

particularly when this change in diagnosis was not followed by a change in treatment need commensurate to a higher degree of injury severity. In the absence of additional treatment, there was no additional health information to corroborate this diagnosis. On these types of claims files, an insurance adjuster was apt to view this change in TBI diagnosis as “building an injury claim” and an attempt by the claimant (or plaintiff lawyer) to demand a higher settlement. Overall, choosing both the type of health information to disclose and when to disclose it, as well as obtaining an HCP’s opinion as to the severity of TBI (or other) injury, were part of a selective disclosure tactic (Cane 2006) that was used in negotiations by a plaintiff lawyer. Such selective disclosure seemed to be for the benefit of a claimant, to advance a TBI claim, thereby seeking to increase the potential for an insurance adjuster to agree to settle a claim for a higher amount.

Of course, settling claims for higher amounts holds the risk of adversely affecting an insurance company’s profits. Therefore, when discrepant health information was found in at-fault claims, insurance adjusters were also more apt to hire a defence lawyer to assist them in trying to settle these claims for less cost than what the claimant was demanding by advancing their position that the MVA was not the material cause of a claimant’s injuries. The strong association of discrepant health information with adversarialness in the at-fault system, then, is reflected by each party (claimant and insurance adjuster) taking an oppositional stance to advance their respective positions.

Authors such as Blau (1984), Griefenstein and Cohen (2005), and Hess (1999) provided helpful perspectives on the underlying reasons why discrepant health information in this study was associated with a higher degree of adversarialness, especially for at-fault claims. The first pertains to the role a health care profession (HCP) plays in relation to a “claimant” (or “defence”) as compared to their role with a “patient.” The second is connected to how an HCP

perceives his or her ethical obligation when occupying these two roles. Blau contends that experts' opinions for the plaintiff are biased in favour of the plaintiff, and experts' opinions for the defence are biased in favour of the defence. Grieffenstein and Cohen see this as a conflicting agenda whereby the practitioner behaves in a partisan manner; for example, the HCP acts as an advocate in support of the plaintiff lawyer in a civil suit instead of providing conclusions grounded in science tightly linked to facts (2005, p. 33).

Expanding on these views, Hess argues that providing an HCP opinion within a legal model is not the same as providing an HCP opinion within a case conference model. The former is used to manage evidence as part of a civil proceeding in a personal injury claim, and the latter is used to manage a patient's care as part of their hospital-based inpatient ICU and rehabilitation care. When occupying these two different roles, a health care professional may perceive their ethical obligations to be different as well. In turn, this can affect their decision on whether or not to downplay or disregard a claimant's pre-accident health factors. In Hess's view, a psychologist (or other health care professional) who cannot accept suppressing relevant information and chooses to "blow the whistle" (by revealing this relevant information) would be abusing the defendant's right to confidentiality and, thus violate an ethical psychological principle (1999, p. 688). Hess's stance exemplifies an issue identified much earlier by Ison (1980). Ison noted that issues faced by physicians in a medico-legal context are problematic as it forces a physician, who has assumed a leadership role in the acute phase of a patient's rehabilitation, to step outside of his or her role and into a role such as "trier of legal fact," "employer" or "social policy decision-maker," which takes place in a context where that physician has no leadership authority or, necessarily, an understanding of a claimant's recovery.

While selective disclosure was a feature in a few claims files in the no-fault system, in all but one instance when such information was a consideration, the claim was simply closed. Since there was only one dispute when this occurred, an insurance adjuster rarely required a defence lawyer to help manage aspects of a no-fault claims management process. As well, a large part of the participation of a defence lawyer related to managing cost. Because the amount of money that might be sought by a claimant was inconsequential in a no-fault claim (compared to what might be obtained in an at-fault claim), it was rare to have the participation of legal counsel to address these disputes in a no-fault system. The reverse was true for at-fault claims because cost containment was a major issue for at-fault insurance adjusters. This aspect emerges again in consideration of both a claimant's degree of contributory negligence/cause-in-fact of the injuries and an insured driver's liability policy limit.

### ***5.3.2 Contributory Negligence /Cause-in-fact of Claimed Injuries***

Whereas a plaintiff lawyer may use the tactic of selective disclosure of health information (pre- and post-MVA) to advance a claimant's position, a counter tactic that an insurance adjuster may use is to advance the position of a claimant's contributory negligence (CN<sup>59</sup>)/cause-in-fact (Cause<sup>60</sup>). This counter tactic was used on claims files in the at-fault system if there was evidence demonstrating that either a claimant's action(s) at the time of the MVA resulted in more serious injury, or that the MVA was not a material cause of the injuries. For example, a claimant

---

<sup>59</sup> The most commonly cited reason for contributory negligence on the claims files reviewed was a claimant being improperly restrained by lack or improper use of a seat-belt (e.g. having the seatbelt buckled up but not properly tethered to the car's seat). Primary sources of evidence that initially brought CN to light included an insured driver's statement and other eye-witness statements, police reports, an ambulance call report, emergency records and/or ICU physician consultation notes, which stated that a claimant had not been wearing a seatbelt or that seatbelt use was in question.

<sup>60</sup> The most commonly cited reason for an insurance adjuster to question whether the MVA was the proximate cause of a claimant's severity of injuries was his pre-accident health factors, such as diagnosed seizure/seizure activity, dizziness, stroke, or being intoxicated (drug or alcohol) at the time of the accident.

not wearing a seatbelt at time of injury was viewed by an insurance adjuster as his or her negligent conduct (contributory negligence). An example of “cause-in-fact” emerged in a case where, at the same time as the accident, a claimant sustained a stroke. In such cases—the first pertaining to the degree of contributory negligence and the second one pertain to cause-in-fact—the insurance adjusters sought to understand whether the claimant would have sustained the same degree of injuries if not for the MVA. In such instances, an insurance adjuster, through their defence lawyer, typically obtained an independent assessment by an engineer who assessed the factors involved in the accident and provided an opinion as to the cause of the accident and whether or not a claimant’s injuries would have been less severe, for example, had he or she been properly restrained by a seatbelt. To further examine such medical issues as to whether the MVA materially contributed (versus pre-accident health factors) to a simultaneous health incident, such as a stroke, an insurance adjuster would typically obtain an independent medical assessment.

The investigation as to a claimant’s contributory negligence/cause (CN/Cause) resulted in a higher measure of adversarialness between claimant and insurance adjuster for two main reasons: (1) the amount of loss (and hence payout) to the claimant caused by the MVA is brought into question; and (2) and suggesting that a claimant’s behaviour either contributed to their degree of injury or to the cause of the MVA personalizes the issue for that claimant. These two factors, both of which are fundamental aspects of tort law, have the potential to limit a claimant’s full compensation, and in turn, can be seen as a source of increased adversarialness in an at-fault claim.

Hale and Cooley (1912) have noted, “compensation is the fundamental and all pervasive principle governing the award of damages [in an at-fault claim] with the measure of that

compensation being, to make the plaintiff whole” (p.4). Seeking to limit a claimant’s damages by pursuing a defence of CN/Cause is opposite to a claimant’s goal of maximizing their award for damages, and so becomes a contentious issue for a claimant. Cane (2006) argues this also personalizes the issue for a claimant (p. 60). A further concern, raised by Atiyah (1997), is that the use of these types of defence strategies, in effect, punish the claimant whose compensation is reduced and leaves the defendant without punishment as he or she is financially covered by their insurance company (p. 38).

Adversarialness is further heightened when an insurance adjuster hires a defence lawyer to defend the insured party against a claim. In the claims files studied for this research, defence lawyers typically were hired early in the claims management process to evaluate the merit of using CN/Cause as a defence strategy. It is important to also note that it was typical for an insurance adjuster to consult with a defence lawyer as to whether or not further independent assessments should be sought to assist in the defence of a claim of CN/Cause (as described in the previous example). The data indicated that hiring a defence lawyer for this purpose directly influenced a higher degree of adversarialness. Involvement of a defence lawyer sent a message to a plaintiff lawyer that the insurance adjuster was investigating aspects of negligence. Specifically, they were doing so primarily as a means of obtaining evidence that would bring judgement against the shifting of loss to their insured driver, and therefore reduce their exposure to the amount of compensation they would be obligated to pay a claimant. The claimant’s (plaintiff) lawyer would then seek to respond by obtaining evidence to counter this move.

### ***5.3.3 Limiting an Insurance Company's Liability***

Another factor contributing to a higher degree of adversarialness in the at-fault system was when a claimed amount was near to or in excess of an insured driver’s policy limit (referred

to as a “large loss claim”). Where an insured driver’s liability policy limit was an issue, insurance adjusters employed another defence strategy—that of trying to contain the cost of settlement to within the insurance policy limit for that claim by indicating that any additional cost in excess of the policy limit might be borne by the insured driver. This strategy was used to limit an insurance company’s financial exposure and the interests of reinsurance companies that had agreed to insure amounts in excess of the insurance policy limit.

Limiting an insurance company's liability by transferring costs in excess of the policy limit to an insured driver can be viewed in the same manner as Cane's (2006) view on contributory negligence: it personalizes the issue for an insured driver who faces potential personal financial loss. It also seems at odds with the purposes of an at-fault system that was summarized by Fleming (1992) as, “however imperfect [the tort system is], the overriding purpose remains compensation, not retribution, or punishment” (p. 236). In effect, transferring loss back to an insured driver seems to contradict one of the fundamental principles of mandatory MVA insurance. According to O'Connell and Robinette (2008), MVA insurance statutes also protect the assets of those who commit torts—the at-fault insured drivers (p. 159).

Evidence from the claims files examined in this study suggest that when insurance adjusters took steps that countered the contractual agreement made by the insurer to indemnify an insured driver in the event of a loss (by indicating to the insured drivers that they might be held personally responsible for any loss in excess of their insurance policy limit), there was a higher degree of adversarialness between an insurance adjuster and that insured driver. Insured drivers believed that their insurance adjusters were not acting on their behalf, by defending the whole claim, and therefore were not honouring their contract to protect their interests. If there was a threat that they would not be compensated in full, claimants felt their interests were not

being honoured. Since most insured drivers in this research did not have the personal financial assets to pay for this loss, it meant that a claimants would be left with less than their rightful amount of compensation when it was judged to be greater than the insured driver's policy limit.

Of relevance to this point is the fact that, according to the SPF 1 standard insurance policy contract, an insured driver is obligated to assist an insurer in defending a claim when requested to do so. The insurance company, for their part, is only obligated to defend a claim up to their policy limit. For the "large loss" claims files, it was observed as standard practice for an at-fault insurance adjuster to inform an insured driver that a claim had been made in excess of their insurance policy limit and to remind the insured driver of the clause in their insurance policy stating the insurance company was only obligated to defend a claim up to their policy limit. In most cases, the insured drivers were unaware of this fact (and a few were angered) when they received this information. In such cases, an insured driver typically became directly involved in the claims administrative phase at the request of the insurance adjuster or defence lawyer. In some cases they also participated in the dispute resolution phase at the request of the defence lawyer. There were two main reasons for such requested participation: first, drivers might have been asked to provide evidence under oath as part of the examination for discovery (which is one of the initial steps in preparing for trial) as to the cause of the accident and what they witnessed; second, they might have been asked by the defence lawyer to provide a deposition that they had little to no assets to remit if their case was to go to court.

In the no-fault system, insurance policy limits were contained as a matter of course because of the statutory regulations that govern this system. Regardless of whether he or she continued to need accident benefits beyond the prescribed monetary policy limit, by regulation a

claimant had no access to benefits beyond the limits that were set. Therefore there was no need to address costs in excess of a no-fault claim.<sup>61</sup>

#### ***5.3.4 Claimant's Relationship to the Insured Driver***

While the three previous factors were associated with a higher degree of adversarialness, one key factor was associated with a lesser degree of adversarialness. When a relationship existed between a claimant and an insured driver, then adversarialness was significantly lower (see Results, section 4.2.3.3, Table 4-11). Data suggested this type of relationship led to more cooperation between an insurance adjuster and claimant in settling a claim. This, in turn, reduced the compilation of discrepant health information on a claims file.

It was evident from analysis of the content contained in the claims files that when there was a relationship between a claimant and an insured driver there tended to be more direct communication between the insurance adjuster and claimant for both at-fault and no-fault claims. This was exemplified by the willingness of a claimant to sign the consent to disclose health information (and that was not revoked by his or her plaintiff lawyer). This disclosure then allowed an insurance adjuster to obtain direct access to a claimant's health information in a timely manner.<sup>62</sup> In these cases, claimants exhibited greater honesty when presenting information regarding their injuries, resulting in less discrepant health information when the information they had provided was compared to what their pre-accident health care records showed. The findings, on willingness to disclose pertinent health information and honesty of

---

<sup>61</sup> Note that in one no-fault claim for a claimant who sustained a severe TBI a request by the internal rehabilitation consultant was made to the Superintendent of Finance for additional no-fault benefits. However this request was denied.

<sup>62</sup> While most claimants had initially agreed to sign the consent to disclose information, there was a greater propensity for a claimant's lawyer to rescind this consent on claims files in which there was no relationship between a claimant and insured driver. As well, whenever a lawyer was acting on behalf of a claimant, an insurance adjuster could not have direct contact with a claimant unless approved by the plaintiff lawyer.

information presented, bear on the concepts of ex-post moral hazard and asymmetric information outlined in the Literature Review (Chapter 2). Overall, the more direct the communication between the claimant and the insurance adjuster, the greater the degree of cooperation. This led to greater alignment between an insurance adjuster and claimant in the valuation of the claim. Of course, this then indicated less conflict between the parties in settlement negotiations and, hence, less adversarialness.

As previously described, in at-fault claims, the regulations in an insured driver's SPF 1 automobile insurance policy stipulate that the driver is obligated to assist an insurance adjuster in defending a claim. While not directly evident from claimant files examined in this study, it is likely that an insured driver who knows the claimant, either through friendship or a familial connection, would have a greater amount of knowledge of a claimant's pre- and post-accident health and function than a driver with no relationship to the claimant. A variety of psychological factors may also come into play, whether they are feelings of guilt, fear for loss of friendship, or other factors. Altogether, in such a context, a claimant who is known by the insured driver is less apt to submit a claim in excess of their true loss, partly because information supporting the claim could more easily be cross-checked by a defence lawyer in the insured driver's examination for discovery, and partly because submission of misleading information is bound to threaten the relationship. In turn, if a claimant's value of loss is more in keeping with the adjuster's estimate (given that this estimate is based on the medical/rehabilitation information an insurance adjuster receives), there is less reason to defend a claim using the aforementioned tactics that were associated with a higher degree of adversarialness. The findings then suggest that: (1) a relationship between a claimant and insured driver seemed to contribute to lower adversarialness; and (2) that more claimants were related to the insured driver in the no-fault

system than in the at-fault system help explain the lower level of adversarialness found in the no-fault system. Conversely, this helps to account for the reason why more adversarialness was found in the at-fault system—there were fewer claimants in this type of system who were related to the insured driver.

These findings appear to support the conclusions drawn by Cummins and Tennyson (1992) that show ex-post moral hazard (i.e. moral hazard occurring after an event transpires that gives rise to an insurance claim) affects claims settlement costs. This was shown in this project by demonstrating that more accurate and timely information of a claimant's health information contributes to less cost (than by the reverse as noted by these authors, i.e., that less accurate information leads to higher costs). Consideration must also be given to an alternative, and simpler, explanation regarding the association between adversarialness and the relationship between a claimant and insured driver: the findings of less adversarialness being significantly associated with a claimant's relationship to the insured driver for claims in the no-fault system may simply be a factor related to first-party insurance (that is insurance which is provided to an insured driver's from his own insurer). As pointed out by Keeton & O'Connell (1965), it was presumed that no-fault insurance would be less adversarialness if provided by a claimant's own insurance company. Further research is needed to address questions of moral hazard and disclosure of information on claims files when there is a relationship between a claimant and insured driver.

A final observation arising out of these findings addresses the role of both parties (the insurance adjuster and claimant) in determining final claims costs. When the claimant was related to the insured driver, both parties seemed to be directed towards keeping the costs contained within existing policy limits of the insured driver. This was the case even when there

was sufficient evidence to support a claim in excess of a policy limit for a severe TBI. One possible explanation may be that any amount claimed in excess of the policy limit would be indirectly borne by the claimants (though this needs to be further established). Nonetheless, this observation made about the at-fault claims files reviewed in this study indicate that, for those claimants who had sustained severe TBI and who were related to an insured driver, they received less than full compensation given their degree of TBI injury. In this light, an at-fault system can be viewed as inequitable for this group of claimants. The possibility of a claimant in an at-fault system not receiving compensation in full exposes one of the inherent flaws of an at-fault system as presented in the Literature Review (Chapter 2). That is, the finding in this thesis lends support to those authors who are of the view that an at-fault MVA insurance compensation system is not a mechanism that ensures just compensation for claimants who are seriously injured.

This type of inequity was described in a number of studies that examined at-fault MVA insurance compensations systems, including the Columbia Study (1932), the Keeton & O'Connell Review (1965), and Osborne Report (1988). These scholars identified that claimants who sustained severe injury were the least compensated in full because of the challenges inherent in proving fault, or because of delays in settling claims (which take years to resolve) that result in dire financial strain for a claimant and his or her family. Therefore, when faced with either of these two circumstances, claimants tended to agree to a lesser settlement in order to have the claim end (and receive some amount of money to pay their debts). While this doctoral study also demonstrated that claimants who sustained more severe TBI are not compensated in full, the results indicated that the familial relationship between a claimant and insured driver was a contributing factor (despite a claimant's ability to prove fault of the insured driver). Further investigation is warranted to determine how prevalent the relationship factor bears on MVA

claims files in an at-fault system and whether or not claimants who are related to the at-fault insured driver receive a higher amount of compensation in a pure no-fault system.

#### **5.4 Difference Between MVA Insurance Compensation Systems on Cost**

The common law that governs the at-fault system allows for a claim of damages for both restitution and compensation as a result of injury from an MVA for past, present, and future needs and losses, as well as over a life-time period. In effect, a claimant who is successful in their claim for damages is theoretically compensated in full in an at-fault system. In contrast, a no-fault system only partially compensates a claimant as future expenses and general damages typically do not get compensated. In this research study, the majority of at-fault claimants received both an amount of money for special and general damages as part of the final settlement awarded to them<sup>63</sup> for past income loss, any out of pocket expense they incurred for medical/rehabilitation costs, and for pain and suffering (to cover the so-called psychic losses). If there was sufficient evidence of proof of a large loss, then money was awarded directly to claimants in the at-fault system to pay for future care needs and future income loss.

In contrast, the only money claimants received in the no-fault system was an amount representing a portion of their income loss.<sup>64</sup> Under the no-fault system, if a claimant required medical/rehabilitation treatment, then direct funding to a rehabilitation service provider was typically arranged between a no-fault insurance adjuster and the treating health care professional (HCP). If money was reimbursed to a claimant, it was typically for costs he or she had first incurred, and that was then reimbursed by the insurance adjuster following submission of receipts of proof that those expense had been incurred. Additionally, in the no-fault system, as

---

<sup>63</sup> For most of these claimants this was provided in a lump sum settlement for which the specific amounts for each of the awards of damages were not itemized.

<sup>64</sup> This included an amount in consideration of non-income earners.

per the statutory regulations, no accident benefits were provided for any aspect of a claimant's future care or future income needs, nor was there any amount awarded for pain and suffering. Based on the amount of dollars claimed, as the results showed, the majority of claimants accessed more in the way of awards of damages in the at-fault system compared to the amount of accident benefits accessed in the no-fault system (see Results, section 4.1.3, Table 4-3c).

While not directly observed, it appears that claimants preferred to exercise their right of full compensation (for both special and general damages) available to them in the at-fault system in comparison to accessing partial compensation (by way of reimbursement of medical/rehabilitation services rendered) in the no-fault system. This is evidenced by claimants accessing, on average, only a few thousand dollars of accidents benefits in no-fault claims when compared to hundreds of thousands of dollars awarded to claimants in the at-fault claims. This will be discussed in more detail in the section addressing TBI injury severity.

Defence lawyer participation in the at-fault system was also significantly associated with a higher degree of cost. As previously mentioned, an insurance adjuster typically sought legal advice when they knew that the awards of damages were going to be high in at-fault claims. The presence of a defence lawyer was therefore an indication that an insurance adjuster would be defending these large loss claims by seeking ways to reduce the amount of their financial exposure. Cost was significantly higher on claims files when there was moderate/severe TBI (as compared to mild TBI). Defence lawyer participation was typically sought in the at-fault system for three main reasons:

- 1) To evaluate the cost of these large loss claims, including an evaluation of general damages, so that an insurance adjuster could understand their risk, and, if necessary, cede an amount of risk to a re-insurer;

- 2) To assist the insurance adjuster in settling large loss claims, preferably within the insurance policy limit, and as part of negotiations between the insurance adjuster and claimant, so as to avoid any further litigation (using the aforementioned defence tactics); and
- 3) To prepare a case for trial if negotiations between an insurance adjuster and claimant failed to resolve the disputes and hence close a claim.

In contrast, due to the strict nature of regulations dictating the limits and duration of claims payouts in the no-fault system, and the fact that claimants did not receive any cash in lieu of their pain and suffering, the aforementioned aspects were not a concern for no-fault insurance adjusters in the claims management process. Hence there was little need for an insurance adjuster to hire a defence lawyer to help manage cost.

#### **5.4.1 Higher Cost to Settle Issues in Dispute**

The use of either private mediation or alternative dispute resolution process (ADR process) typically indicated that neither side was willing to concede their position. The use of these mechanisms to help resolve a dispute was more prevalent in the at-fault system than in the no-fault system, presumably because there was more money at stake in the at-fault system. Only one of the 35 at-fault claims files were settled through a judgement in court. The majority of claims were settled in negotiations directly between insurance adjusters and claimants (see Results, section 4.3.2, Table 4-19). Two key factors assisted in settling claims through negotiations:

- 1) A concession on the part of an insurance adjuster to agree to a higher settlement amount than what they valued the claim to be worth; and
- 2) The credibility of the claimant as a witness if a case were to proceed to trial.

Traumatic brain injury (TBI) severity played a role in cost when it came to these factors (as discussed in the next section).

## **5.5 TBI as a Consideration Pertaining to Cost**

When it came to cost, a claim of moderate/severe traumatic brain injury (TBI) was associated with higher cost in both the at-fault and no-fault systems (vice versa for a claim of mild TBI severity). On the surface, this was not surprising—a greater degree of injury severity would naturally result in higher cost and longer recovery time. At a deeper level, though, the significant difference in cost between the TBI severity groups point to three fundamental aspects of the design of an MVA insurance compensation system, namely:

- The kinds of medical/rehabilitation evidence used to support a claim for mild versus moderate/severe TBI;
- A claimant's right to access remedies of his or her choice from either an at-fault system or a no-fault system or both (within the parameters of the regulations that govern these systems); and
- The inequity and moral hazard that is inherent in the design of no-fault and at-fault MVA compensations systems that are particular to certain groups of TBI claimants.

Each aspect will be discussed separately.

### ***5.5.1 Kinds of Medical/Rehabilitation Evidence to Support a TBI Claim***

As previously outlined, both the at-fault and no-fault systems required that a claimant provide “proof of loss” that the motor vehicle accident (MVA), from which he or she was claiming to have sustained a traumatic brain injury (TBI), was the materially contributing factor. Significantly more claimants in the moderate/severe TBI group were provided with hospital-based inpatient care (for both ICU and rehabilitation). This group also had, on average, a

hospital length of stay (LOS) greater than two days when compared to claimants in the mild TBI group (see Results, section 4.2.1, Table 4-14). LOS was indicative of a few important and interconnected aspects: first, a longer LOS meant that a claimant received more hospital-based medical/rehabilitation care; second, claimants who accessed more hospital-based inpatient care also tended to access community-based care; and third, and perhaps most importantly, it was a claimant's records from both hospital-based and community-based care that was viewed by insurance adjusters as proof of injury from that MVA. As previously discussed, hospital and community-based health care records (as opposed to independent medical assessments) were viewed by insurance adjusters as a non-partisan source of information on the claimant's health condition based on the assumption that their essential purpose was to provide a summary of a claimant's injuries, treatment goals, interventions used, and other information related to health needs. The purpose of health care records lie in contrast to the purpose of independent medical assessments: the latter is to provide an opinion for medico-legal purposes as to the degree of injury impairment caused by the MVA (and in some types of independent assessment, the long term impact, and related costs of the impairment). Therefore, insurance adjusters tended to trust the information provided in health care records more so than when the information was provided via an independent medical assessment for medico-legal purposes.

The results indicated that 27 (82%) of the 33 claimants in the moderate/severe TBI group had radiological evidence (as per their hospital-based inpatient health care records) of a brain/head injury, compared to four (17%) of the 24 claimants in the mild TBI group. Twelve (36.4%) of 33 claimants in the moderate/severe TBI severity group were provided with community-based hospital neuro/TBI follow/assessment care, while only two (8.3%) of 24 claimants in the mild TBI severity group received this type of care. Additionally, 11 (33%) of

the 33 claimants in the moderate/severity TBI group required other specialized TBI services to address their academic, vocational and other long-term care needs, whereas none (0%) of the 24 claimants in the mild TBI severity group accessed community-based therapeutic services for these types of needs. Although 11 (46%) of claimants with mild TBI accessed a community-based TBI/neuro-assessment by a neurologist, the majority of these claimants received only a one-time assessment, which was primarily geared towards providing education and reassurance that their symptoms would resolve in time (as opposed to receiving treatment).

For the majority of claimants in the moderate/severe TBI group, then, these health records provided essential facts to support their TBI claim. For many of the moderate/severe TBI claimants, their records showed that these claimants received hospital-based inpatient, multidisciplinary care, the primary treatment was for a TBI, radiological evidence showed a brain/skull injury, and so on. The health information in the claims files for the majority of claimants in the mild TBI group, however, provided little to no evidence of damage to the head or brain (based on radiological evidence), no record of hospital-based care, and no primary diagnosis of TBI to support a TBI claim from their MVA. In fact, few had received any treatment for a TBI, either in a hospital-based facility or in a community-based facility. Overall, these findings were consistent with the conclusions in a study by Borg et al. (2004) who found that the majority of claimants with mild TBI presented with a medically uneventful course of acute care that required little to no treatment for a TBI from either a hospital-based or community-based facility.

These results help to explain why claimants in the mild TBI group accessed, on average, only two percent of the available policy limits in the no-fault system (which equates to approximately \$1,000.00 in accident benefits). Claimants in the moderate/severe TBI group

accessed nearly 39% of the available no-fault accident benefits (which equates to approximately \$13,000.00 in accident benefits). In contrast, in the at-fault system, the mild TBI group accessed, on average, \$127,286 in the way of damages and the moderate/severe TBI group accessed, on average, nearly \$600,000 in the way of damages (see Results, section 4.1.3, Table 4-3c). Of interest in this data is that neither TBI groups accessed the full amount of no-fault accident benefits that were available, even though claimants in both TBI groups were awarded a sizeable amount of compensation in the at-fault claims.

Costs in an at-fault system are higher because this type of system attempts to compensate claimants in full, via damages for: (1) long-term (future) care costs to treat the injury; (2) future income loss to replace a claimant's inability to earn an income; and (3) an amount awarded for pain and suffering. None of these features were part of a payout in no-fault claims, even for the most seriously injured claimants. In short, not only was there significantly more funding available for both the mild and the moderate/severe TBI groups in the at-fault system than in the no-fault system, claimants in both TBI groups took full advantage of the coverage for damages available in the at-fault system, while few claimants took full advantage of the available benefits in the no-fault system. This behaviour contributed to higher cost overall in the at-fault system compared to the no-fault system for both of the TBI groups. As previously alluded, it may well be that claimants prefer to exercise their right to full compensation in an at-fault system more than claimants do to recover partial compensation in a no-fault system.

### ***5.5.2 Claimant's Right to Access Remedies of His or Her Choice***

Currently, under the Alberta MVA insurance compensation system, a claimant can choose to access compensation via the at-fault system, the no-fault system or both. Unlike the

province of Ontario<sup>65</sup> or the states of Michigan and New Jersey, that have thresholds in place to reduce the incentive to sue, Alberta's MVA insurance compensation system has no disincentives in place to deter a claimant from proceeding with a civil action against an at-fault, third party in an MVA claim. Therefore, in Alberta, a third-party claim can be filed regardless of injury severity and need. Given these parameters, it is not surprising that mild TBI claimants accessed few accident benefits in the no-fault system and still continued to claim in an at-fault system. The majority of claimants in this group did not need treatment for a TBI and therefore did not access accident benefits in the no-fault system, but still retained the right to sue the at-fault driver who caused the MVA for damages.

Of particular interest from these findings, claimants with more serious injury also seemed to favour accessing damages in the at-fault system than through accessing accident benefits in the no-fault system.<sup>66</sup> Note that only a few of those claimants accessed the maximum coverage available in the no-fault system. These were the claimants who sustained the most severe TBI; and of those, the majority were liable for the accident and therefore could not collect in the at-fault system. However, as outlined by the National Rehabilitation Reporting System, Canadian Institute for Health Information (2006–2007), individuals with moderate/severe TBI typically require service support following their hospital stay. If so, given that accident benefits in the no-

---

<sup>65</sup> For example, Ontario's system has both a verbal and monetary threshold. To pursue an at-fault MVA claim in Ontario, two statutory requirements have been put in place, as outlined by (Financial Services Commission of Ontario, n.d.). First, the verbal threshold states that a claimant must provide evidence that he/she sustained a permanent and serious impairment affecting an important bodily function. Second, the monetary threshold imposes a (CDN) \$30,000.00 deductible on at-fault claims which do not exceed a total award of damages of (CDN) \$100,000.00. These two thresholds help to avoid minor injuries and small damages claims from proceeding to trial and results in improved claims management efficiency.

<sup>66</sup> This was observed based on both the amounts that claimant in the moderate/severe TBI group accessed in the no-fault claims reviewed and the amount of no-fault benefits claimants in the moderate/severe TBI group accessed based on the at-fault claims reviewed. Recall that the total awards of no-fault benefits were also included in the at-fault claims files.

fault system are more readily available because fault does not have to be proved (and is probably less adversarial as a result), then one would tend to see significantly higher costs for claimants in the moderate/severe TBI group in the no-fault system. As well, if legal scholars such as Ison (1980) and Keeton & O'Connell (1965) were correct in assuming that the focus in a no-fault system is on rehabilitation, then why didn't more claimants with moderate/severe TBI maximize their accident benefits coverage?

The results in this study suggest that claimants value their right to sue the wrongdoer more than they value the opportunity to immediately access remedies in the way of goods and services for rehabilitation. This conclusion is supported by two Canadian studies (Osgoode Hall Study, 1965; Osborne Study, 1988) that stand firm on the idea that components of an at-fault and no-fault MVA insurance compensation system can "peacefully co-exist," as both the right of a claimant to sue and the need of claimant to be able to access immediate rehabilitation are preserved. Nevertheless, further research is warranted in this area.

Overall, given the data analyzed in this study, the right to access damages in the at-fault system, regardless of injury severity, is advantageous for some claimants and less so for others. The right of access to compensation via a third-party claim, only afforded to a few, is seen as inequitable as viewed by legal scholars such as Atiyah, and Keaton & O'Connell. Additionally, the access to awards of damages specifically for pain and suffering in a third-party claim of this nature can create a moral hazard (as highlighted by economists such as Cummins and Tennyson). The results of this study seem to point out these two "flaws" in Alberta's MVA insurance compensation system (as discussed next).

### ***5.5.3 Inequity and Moral Hazard***

Legal scholars such as Atiyah (1997) and Keeton and O'Connell (1965) argue that the right to access damages in the at-fault system is advantageous for claimants who have sustained less serious injury. Atiyah (1997) and Ison (1980), in particular, view this as winning the forensic lottery because it creates an inequity for claimants who have sustained severe injury and especially those who cannot access this type of compensation due to factors such as being liable for the accident. One startling finding of my research was that claimants with mild TBI, where pre-accident health factors were an issue, settled for higher costs in the at-fault system compared to claimants in the mild TBI group, where pre-accident health factors were not an issue (see Results, section 4.3.2, Table 4-18). In fact, a higher negotiated settlement was achieved despite many of these claimants having pre-accident health factors for which the insurance adjusters were contending to be material to their defence (i.e. the MVA was not the leading cause of the injuries being claimed). It appears, however, that insurance adjusters in the at-fault system tended to settle these types of claims out of court and for higher amounts than incur the higher administrative costs to pursue them in court. These claims tended to fall into the category of the so-called nuisance value claims. The insurance adjusters viewed these claimants as opportunistic—making a bodily injury claim simply because of having been in an MVA.

As well, in this study there were twice as many claims made by claimants with mild TBI in the at-fault system when compared to claims made by claimants with TBI group in the no-fault system. Note that none (0%) of the 16 claimants in the mild TBI group making an at-fault claim were related to the insured driver. Furthermore, of these 16 claimants, only three (17%) could provide hospital or community-based health care records showing they had received care; and only two of the three claimants had a primary diagnosis of TBI. The remaining 13 (83%) had

no hospital-based or community-based health care records to demonstrate evidence of a TBI from their MVA. Therefore the majority of claimants in this group were only able to provide a medico-legal opinion from a health care professional (HCP) or set of HCPs to support their claim of TBI and degree of recovery from the MVA. These findings tend to support previous research, such as those conducted by Cummins and Tennyson (1996) that suggests moral hazard exists for some claimants following a motor vehicle accident. Given that the results of the current study indicate that insurance adjusters agreed to pay higher awards for these types of claims, it seems they chose to do so to balance the higher administrative costs that would be incurred to bring such a claim to trial. The results of this study lend support to the conclusions made by Cummins and Tennyson.

This thesis research also demonstrated that when a community-based HCP provided an opinion as to the injuries sustained in the MVA, many down-played or ignored the significance of a claimant's pre-accident health factors, or tended to diagnose a claimant with a more severe TBI (as identified in the Results, section 4.2.2.2, Table 4-7 [a higher degree of adversarialness and discrepancies in health information]; and per the two case illustrations in sections 4.2.2.3.1, Table 4-8, and 4.2.2.3.2, Table 4-9). This finding seems to suggest that moral hazard related to claiming behaviour (ex-post moral hazard) exists for some of the health care professionals who provide medico-legal assessments. Further research is warranted to determine the degree of ex-post moral hazard among health care professionals, especially related to whether or not this is more of a function at the individual level (for example, whether or not it pertains to any one particular HCP, or particular speciality of HCP) or if, at all, it appears to be more systemic.

Not all so-called nuisance value claims were settled for a higher value in negotiations between the insurance adjuster and claimant without first proceeding to trial. As previously

noted, when an insurance adjuster decided to pursue a trial, and key players within the court system got involved, claimants in the mild TBI group settled their claim for less compared to claimants who negotiated their settlements in the claims administrative phase (see Results, section 4.3.2 Table 4-19). The reasons for this appear to be: (1) these claimants were seen as being less credible and therefore the defence was more willing to risk going to court; and (2) the examinations for discovery, whereby a defence lawyer examined a claimant under oath, appeared to offset asymmetric information. Most claimants in the mild TBI group who participated in the examinations for discovery revealed a truer, more consistent picture of the events of the MVA, their degree of post-traumatic amnesia, or whether or not they had returned to work. All of these factors appear to have helped an insurance adjuster to evaluate the true cost of an at-fault claim. Nonetheless, the insurance company incurred higher administrative costs when a defence lawyer was hired to proceed to trial. Further research is warranted to examine these factors.

Given these findings, an interesting question then arises from a policy perspective: what changes might result in an MVA insurance system being less adversarial and more equitable in terms of access to benefits for claimants who sustain a moderate/severe TBI as compared to those with a mild TBI? To a large extent, the greater degree of adversarialness on the MVA claims files reviewed was associated with claimants having pre-accident health factors that were the same or similar to the ones being claimed, or when there was a change in TBI diagnosis from a less severe to a more severe degree. Interestingly, these aforementioned key factors were an issue regardless of the design of the MVA system (at-fault or no-fault). Higher cost was also significantly associated with claimants in the mild TBI group where pre-accident health factors were an issue and when there was no relationship between the claimant and the at-fault driver

who caused the accident. In these cases, it appears that lack of timely access to a claimant's health information was at the heart of the issue.

Based on this information, I suggest addressing changes, not from an MVA insurance compensation system design alone, but from a large health care system design point of view. One recommendation would be to develop a provincial registry of claimants who have made MVA insurance compensation claims as part of the Alberta Health Services system. A similar provincial registry already exists for motor vehicle accidents that exceed a monetary threshold reporting to a collision centre (the information is then collected and analysed by the Ministry of Transportation). Similar to the manner in which property damage gets reported to a registry, claimants (or physicians) would be required to report their bodily injury they sustained in an MVA to the proposed "claimant" registry, along with additional information such as the type of treatment required and accessed. A registry of such information might help reduce the adversarialness and higher costs associated with claimants' pre-accident health factors as this type of information would be more readily available to insurance adjusters. In turn, information of this type might be useful to vehicle manufacturers in terms of improving vehicle safety.

Pertaining to the differential diagnosis of TBI, one of the observations I made while reviewing the 57 claims files in this study is that Alberta's rehabilitation sector could be improved to provide a more systematic delivery of care for individuals who have sustained neuro-trauma from a motor vehicle accident. For example, from the review of the health care charts for those claimants who were admitted to inpatient ICU and neuro-trauma care, it appeared that no standard set of procedures were used to determine which patients got admitted to an inpatient neuro-rehabilitation unit in a hospital versus those who were discharged following their ICU stay. Admittance to neuro-trauma care was done on a case-by-case basis and there was

no set standard as to when, how, and by whom the implementation of the Galveston Orientation and Amnesia Test (as outlined by the guidelines for this test) was conducted to measure a patient's re-orientation to person, place and time. Also absent was a set standard as to which patients received a neuropsychological assessment as part of their inpatient neuro-trauma rehabilitation stay and which patients did not. In all cases, it appears that clearer standards of practice would be beneficial to the health of all persons involved in MVAs.

Overall, I was struck by how similar the treatment was for individuals who sustained injury from an MVA was in Alberta's neuro-trauma rehabilitation sector when compared to Ontario's neuro-trauma rehabilitation section in the years following the changes of Ontario's MVA insurance compensation system from an at-fault to a threshold no-fault system in 1990. As noted by the (Ontario) Provincial Rehabilitation Reference Group (2000), "there is an acknowledged need to make changes to the rehabilitation sector, in order to improve the efficacy of rehabilitation services" (p.1). For Ontario's healthcare system, this included the development of the Greater Toronto Area Rehabilitation Network (GTA Rehabilitation Network). The GTA Rehabilitation Network is made up of publicly-funded hospital and community-based organizations from across the Greater Toronto Area (GTA) that are involved in the planning and provision of rehabilitation services. As cited by this group, "The GTA Rehab Network is a leader in improving the planning and delivery of rehabilitation care. Committed to the integration of rehabilitation throughout the continuum of care, we develop innovative solutions to system-wide issues" (Greater Toronto Rehab Network, n.d.). As part of this GTA Rehab Network, a standard process to determine who gets admitted to inpatient neuro-rehabilitation care has been clearly defined.

In order to improve the efficacy of rehabilitation services in Alberta, a similar rehabilitation initiative could be considered. This could begin by conducting further studies to assess the prevalence of these observations in either claims files of this nature or in a comparative analysis that examines patients who have sustained a TBI from different causes other than from an MVA, such as from a stroke, a slip and fall in one's home (and for which third-party compensation would not be provided).

## **5.6 Summary and Conclusion of the Discussion**

This research study is the first of its kind to find measurable differences between an at-fault and no-fault MVA insurance compensation system based on measures of adversarialness and cost—where both adversarialness and cost are significantly higher in the at-fault system. It also appears to be the first study to find measurable differences between a mild and moderate/severe TBI group of claimants within an MVA insurance compensation system on measures of cost and recovery—where both cost and recovery are significantly higher and longer, respectively, in the moderate/severe TBI severity group claiming from Alberta's MVA insurance compensation system.

As well, this thesis is the first to associate significant key factors (and significant key players who participated in the claims management process to address these key factors) with measures of adversarialness and cost to help explain the reasons for the differences found between the two types of MVA systems on these measures. The degree of a claimant's traumatic brain injury (TBI) as it related to higher cost and longer recovery was also examined to shed further light on the differences between an at-fault and a no-fault MVA insurance compensation system on measures of adversarialness and cost. Overall, the study revealed that a higher degree of adversarialness was significantly associated with the following key factors being an issue:

- Discrepant health information demonstrating a claimant's pre-accident health factors could be a material cause of the MVA and/or when there was a change in TBI diagnosis subsequent to the initial diagnosis of less severe injury;
- A claimant's degree of contributory negligence/cause of the injuries being an issue; and
- When an initially claimed demand was near to or exceeded the claims policy insurance limit.

Essentially, there was a greater degree of opposition between an insurance adjuster and a claimant when at least one of these factors was an issue. The study also revealed that a significantly lower degree of adversarialness was associated with the key factor of a claimant having either familial or friendly relationship with the driver who caused the accident (at the time of the accident). There were more claimants in the no-fault system related to the insured driver than there were in the at-fault system.

There was more money available to claimants in an at-fault system than in a no-fault system. This difference is primarily due the rules of tort law, which govern an at-fault system and allow for full compensation to be obtained (compensating claimants losses for both past and future income and health care benefits and for pain and suffering). Therefore many claimants who had the right to sue the at-fault driver (regardless of injury severity) tended to make a claim for damages in the at-fault system. For the majority of claimants with moderate/severe TBI (and for a few claimants with mild TBI injury), the amount they claimed in their at-fault claim often exceeded an insured driver's policy limit in an effort to maximize the fullest amount of damages they could recover (if a judgement was rendered in court). These types of claims were referred to as large loss claims (from the outset of the date of the accident).

The majority of these claims settled for higher costs because of the type of evidence the claimants presented as proof of severe injury from an MVA (primarily for those claimants who sustained a moderate/severe TBI injury). The medical/rehabilitation health information that was presented unequivocally demonstrated such radiological evidence of a brain injury or skull fracture, immediate diagnosis of a moderate/severe TBI, and TBI treatment for a moderate/severe TBI. Also, a more severe TBI required a claimant to spend several days or sometimes months in a hospital recovering from the effects of the TBI. With this type of medical/rehabilitation evidence, an insurance adjuster generally conceded that costs were going to be high and then he or she typically worked together with the claimant (or his or her plaintiff lawyer) to try to settle a claim for a reasonable amount—which was hopefully within the insured driver's policy limits.

Settling large loss claims within an insured driver's policy limit was of most benefit to the insured driver (who might be held financially responsible for paying any amount in excess of the policy limit that was awarded to claimants) and reinsurer (who had contractually agreed to finance any loss in excess of the amount that the primary insurer chose to retain). There was also a significant association between an insured driver or a reinsurer participating in the claims management process and a higher degree of adversarialness—both of whom typically got involved in the claims management process to protect their own interests.

A significantly higher degree of cost was associated with a claimant's degree of TBI. In general, claimants who sustained a greater degree of TBI accessed more in the way of awards of damages in their at-fault claim or more in the way of accident benefits in their no-fault claim. While it was not surprising to see higher settlement costs for claimants who sustained

moderate/severe TBI in both the at-fault and no-fault systems, it was surprising that more claimants in this group did not take advantage of the full amount of accident benefits available. Conversely, claimants with mild TBI injury tended to access less in the way of damages in the at-fault system and accident benefits in the no-fault system compared to those who sustained a greater degree of TBI. While this was also not surprising, what struck me the most was the fairly generous awards the claimants in the mild TBI group received in their at-fault claims compared to the relatively small amount of accident benefits claimants with mild TBI accessed in their no-fault claims. A reason for these outcomes might be that claimants, who could sue the at-fault party, did so in order to take advantage of the full compensation they could receive in this type of system (compared to only a portion of what a claimant could receive in a no-fault claim). It might have been that a claimant would rather exercise his or her right to sue the at-fault driver for compensation than spend time and energy on accessing accident benefits in the no-fault system (and only to have their at-fault claim settlement reduced by the amount of money he or she received in way of accident benefits).

The results of the study also revealed that cost was also significantly higher for at-fault claimants who sustained mild TBI and who had pre-accident health factors of the same or similar injuries that pre-dated the MVA. The claims files that had these factors were generally considered by an insurance adjuster as nuisance value claims since they lacked the commensurate health care records to demonstrate that they had sustained a TBI from the MVA. The results of this study suggest that insurance adjusters consider factors such as moral hazard, lack of full disclosure of a claimant's health information, and claims management efficiency when managing these types of claims. It appears that nuisance value claims in the at-fault system settled for a higher value simply as a means of closing the file faster and reducing the

potential of incurring higher administrative costs to defend such as claim. Legal rights aside, from a rehabilitation perspective—and considering that mild TBI claims settled for over a hundred thousand dollars, on average, in the at-fault system—this indicates that the at-fault system is an inequitable means of compensation for TBI claimants, especially for claimants with severe TBI who were liable for the accident and could only access a fraction of this amount in the no-fault system.

### **5.7 Limitations of the Study and Prospects for Further Research**

Perhaps the most substantial limitation of this study is the small sample size (N of 57) from which data was obtained (as contrasted with the large number of independent statistical tests of probability conducted on the same sample, with approximately 112 tests run). As noted by Hinkle, Wiersma, and Jurs (1998), “when more than one *t* test is run, each at a specified level of significance (such as, alpha = 0.05), the probability of making one or more type I errors in the series of *t* tests is greater than alpha” (p. 346). As the number of independent *t* tests increases, so too does the chance of rejecting the null hypothesis, when, in fact, it is true. It also might be noted that given the small sample size, the chance of committing a Type II error is also higher. A small sample size results in a lower power to be able to detect an effect, which means I may have erroneously failed to reject the null hypothesis when in fact it was false. Further study is recommended using a large sample size.

A Bonferroni adjustment could have been used as a means of controlling for the increased rate of making a Type I error. A very conservative adjustment might be to use an alpha = 0.0005. This would, however, have eliminated the majority of the key factors and key players identified as being significant in this study at the alpha level = 0.05.

Given that this doctoral research set out to *explore* the potential key factors and key players that were thought to influence the dependent measures under study, I chose to identify more, not less, of the possible key factors and key players. My goal was to open up discussion of the possibility that these key factors and key players could be significant. For this reason, the choice was made not to use a Bonferroni adjustment. Further studies are recommended to examine separately the key factors and key players in each of the four phases of the claims management process using independent samples to offset the chances of committing a Type I error.

Another significant limitation of this study is that all of the samples were drawn from Alberta's at-fault MVA insurance compensation system. The Section B, no-fault claims files were used as a proxy to a pure no-fault system from which comparisons would be made to the Section A, at-fault claims files within the same MVA compensation system. In this manner, no-fault claims files were not completely independent from the at-fault claims files as the majority of claimants had access to claims files in both types of MVA insurance compensation systems. This relatedness might have lessened the degree of adversarialness and cost found in the no-fault system. As an example, when the no-fault insurance adjusters began to question the validity of a claim for benefits based on the MVA being the cause of a claimant's injuries, a claim was closed without dispute by a claimant. This action also resulted in less cost. Further research examining the degree of adversarialness and cost in a pure no-fault system in which a claimant cannot sue a third-party for damages would help clarify whether or not the degree of adversarialness and the amount of cost would be different than what was found in this study.

While these phenomena may or may not exist in a pure no-fault system where there is little or no opportunity to make a third-party claim, the exploratory nature of the study involving

a comparative analysis between the Section B (no-fault claims) and the Section A (at-fault claims) files in Alberta's MVA insurance compensation system has provided new insights worthy of exploration. Specifically, relevant key factors and key players, inherent in both systems, have been uncovered, thus serving as a base for further analysis.

It is also important to address the limitations related to the conceptualization of the dependent measures. First, there could be other approaches to how the measures of adversarialness and responsiveness are defined and scored. For example, it is possible that the individual items used to measure adversarialness, such as whether or not a defence claim was filed, were more relevant to the at-fault system—a system which is already known to be more adversarial—as compared to a no-fault system. In terms of responsiveness, it is possible that the use of such a wide ranging definition as a request for “something” was not discriminating enough to reveal whether or not there was a difference between the two systems.

I observed that the at-fault system was most responsive in requests that pertained to the accident-fault investigation phase and to the dispute resolution phase. However, I also noted that these phases were less relevant to managing a claim in the no-fault system, and so there were few requests relevant to these phases for no-fault claims. The no-fault system had strict regulations as to the amount of time a claimant had to file a claim and to submit for accident benefits. There was therefore a higher degree of responsiveness in the no-fault system relating to a request for health information (as opposed to the rate of responsiveness for this type of information in the at-fault system). While differences were observed between the two types of systems at each phase of the claims management process, there was no overall difference in the rate of responsiveness when the claims management process was considered as a whole.

Even though I obtained a moderate to high degree of inter-rater reliability for both adversarialness and responsiveness, further validation of these measures is required. Future studies might include examining each phase separately to determine whether significant differences in responsiveness could be found. Adversarialness could also be measured in this manner as well. The concept of recovery is also limited due: first, to the fact that recovery was defined by whether or not a claimant returned to work; and second, a definition of “successful return to work” also included whether a claimant was judged to be deemed capable of a return to work by a key player, but was not validated by a claimant or representative of a claimant. To help validate whether or not a claimant was successful in his or her turn to work, future studies could include interviewing key players such as the claimants, claimants’ employers, or treating physician, to get their perspectives on this matter.

Another interesting aspect of recovery observed in the review of the claims files was that the majority of health care benefits a claimant received were obtained through the public health care system and not from either the at-fault or no-fault motor vehicle accident insurance compensation systems. Neither MVA insurance compensation system focused on recovery of the claimant, with the exception of those claimants who sustained a severe traumatic brain injury (as defined by the Glasgow Coma Scale of 8 or less). In this study, claimants with moderate TBI were clustered together with claimants who had sustained severe TBI primarily due to the small sample size for these types of claimants. If, on one hand, the claimants had been grouped according to three different degrees of TBI (mild, moderate and severe) or, on the other, the moderate TBI claimants had been clustered with the mild TBI claimants, then there might have been a significant difference found between the groups of TBI claimants. Considering there were more claimants in the no-fault system who sustained severe TBI as compared to claimants

in the at-fault system who had sustained severe TBI, and that claimants who sustained severe TBI had the slowest rate of recovery, then the results might have demonstrated that claimants who sustained severe TBI in the no-fault system had a longer rate of recovery compared to claimants in the at-fault system who had sustained severe TBI. It is recommended that further studies be conducted with a sufficient sample size in order to cluster claimants into three distinct groups of mild, moderate, and severe TBI.

Another limitation to this study was the small number of insurance company sources from which claims files were accessed. The two insurance companies that agreed to participate have a small share of Alberta's MVA insurance market. While this was less of a factor in terms of generalizability to Alberta's MVA insurance compensation system as whole, given the strict nature of how claims of this nature are managed, it must be noted that both insurance companies are headquartered in Western Canada. As such, they serve only a small percentage of Canada's motoring population. Therefore it is conceivable that the manner in which these companies process their MVA claims may differ from companies that are headquartered in other Canadian provinces or abroad. This factor limits the generalizability of findings from this study to only the MVA claims of TBI within Alberta. Similar research with a broader range of insurance companies, and across other provinces, is warranted.

A final limitation is the manner in which claims files were identified for this study. Claims files were identified using insurance adjuster recall. Though the insurance adjusters seemed quite familiar with all the claims files identified, it is possible that a selection bias operated in that only the more difficult claims files were selected. This would help to explain the smaller number of mild TBI claims overall compared to the moderate/severe TBI claims and the rather small sample size in the no-fault system for mild TBI claims compared to the larger

sample size in the at-fault system for the mild TBI claims. At the time the study began, insurance companies (and the Insurance Bureau of Canada) were collecting data that included type and degree of injury severity. If this information is available, then access to this type of data as a means of selecting claims files for future studies is recommended. Another study with a larger, and potentially less biased, sample size that examines the same issues would be useful to verify this study's findings.

## **5.8 Implications and Recommendations for Key Stakeholders**

This section outlines the implications and recommendations for key stakeholders that the writer views as relevant based on the results of this research. The key stakeholders are grouped as follows:

- The insurance system;
- The health care system;
- The judicial system;
- The government; and
- The claimants.

The implications and recommendations for each of these groups are discussed separately.

### **5.8.1 The Insurance System**

Currently, Alberta's Ministry of Finance, while taking a wait-and-see approach, is considering making changes to the MVA insurance regulations by defining major injury.<sup>67</sup> If this happens, the results of this study (in terms of what constitutes major injury) would be helpful to Alberta insurance companies and to the Insurance Bureau of Canada (IBC) in helping to draft

---

<sup>67</sup> Minor injury was defined in 2004 and which excluded a diagnosis of traumatic brain injury.

their submissions to the Ministry of Finance. For example, the results of the research have shown that only a small percentage of claimants in the mild TBI group were actually diagnosed as having a TBI during their acute care. This information might be helpful to the IBC in demonstrating to the government that claimants who present with the effects of a TBI do so from the outset of their MVA and, for the most part, this has been documented as part of either an emergency care report, hospital-based care report, or community-based care report in which the claimant is actually receiving treatment for a TBI. In this regard, a diagnosis of a TBI might be considered to be defined as a major injury when accompanied by treatment for this type of injury, either as part of hospital-based inpatient care or community-based care.

While the study looked at the Alberta MVA insurance compensation system, the results can be of value to other provincial jurisdictions. For example the Chief Executive Officer (CEO) and Superintendent of Financial Services, Financial Services Commission of Ontario (FSCO), is currently addressing changes to Ontario's MVA insurance compensation system definition of catastrophic impairment (CAT impairment). In May 2011, the Insurance Bureau of Canada (IBC) provided preliminary comments as the first part of a two-part submission. The Insurance Bureau of Canada has proposed the use of "hospital admission" as a gatekeeper function, because, as noted by IBC, "we recognize that the publicly funded system is well-established in triage and directing people to appropriate levels of treatment" (p. 5). Medical/rehabilitation (MR) data provided in this current study would help to support IBC's position. For example, the data in this current study showed that approximately 83% of claimant in the mild TBI group had been attended by an ambulance at the scene of the accident, yet only 75% of the claimants with mild TBI were transported to an emergency facility, with even fewer (17%) being admitted to ICU and none being provided with inpatient neuro/TBI rehabilitation. Furthermore, the average

hospital length of stay for this group was less than one week. This was compared to 100% of claimants in the moderate/severe TBI group who were attended to by an ambulance at the scene of the accident, followed by a significant number (82%) who were admitted to ICU, with approximately 33% being admitted to inpatient neuro/TBI rehabilitation. The average hospital length of stay for this group was over two months.

A third and final implication of the study pertains to assisting an insured driver who finds himself or herself liable for a third-party claim. A proposed claim that was near to or exceeded the policy limit was one of the key factors found to have influenced a significantly higher degree of adversarialness. Although the Standard Insurance Policy (SPF 1) already includes a clause noting that an insurance company is only obligated to protect the financial interests of the insured driver up to their policy limit, the results of this research demonstrated that most insured drivers who received a letter notifying them of this were surprised. The Brokers' Association of Alberta could play a role in helping to reduce the amount of adversarialness on large loss claims. For example, an insurance broker might highlight the clause in their SPF 1 Automobile Policy to their customers when they are renewing their insurance contracts. As well, an insurance broker could remind their customer that, in the event of an accident in which they are seen as being materially liable for the cause, an insurance adjuster might request their participation in defending the claim.

### **5.8.2 Implications and Recommendations for Health Care System**

This study will help to fill in a few gaps in the literature by providing measurable differences between a no-fault and at-fault MVA insurance compensation system, in particular between claimants who have sustained a mild TBI from those who suffered a moderated/severe TBI in an MVA. The statistics presented in this study are useful to such groups as the Ontario

Neurotrauma Foundation, who created the first Canadian guidelines for health care professionals assisting individuals who have sustained a mild TBI. Even now, Marshall et al. (2012) indicate that, with the exception of the studies done by military groups, little guidance is provided on the assessment and management of persistent symptoms of mild TBI beyond the typical acute care recovery period (p. 258). This current research provides additional information for a group of MVA claimants, indicating that a small percentage of claimants with mild TBI do, in fact, access treatment for a TBI following an MVA at both a hospital-based and community-based facilities.

The results of this current study could also be helpful to such organizations as the Society of Medical Evaluators whose members conduct medico-legal assessments for claimants who sustain TBI from an MVA. Specifically, this doctoral research points to the need of further education for health care professionals (HCPs) conducting medico-legal assessment for claimants in Alberta's MVA insurance compensation system. This thesis demonstrates how discrepant health information significantly influences a higher degree of adversarialness on claims files. In this regard, an HCP needs to be urged to ensure that he or she has carefully evaluated a claimant's pre-accident health factors as these matters eventually come to light. I am personally of the view that, if a claimant's pre-accident health factors are highlighted as early as possible in the claims management process, there might be less discrepant health information that arises as the information presented by an HCP in his or her report will have included a claimant's pre-accident health information. A certain amount of unwarranted adversarialness on MVA claims files might be eliminated with a thorough and balanced review of a claimant's pre and post MVA health information in a timely manner. Of course, the trade-off might mean less compensation for claimants who have pre-accident health factors that are the same or similar to the ones being claimed in an MVA. One must consider, however, that this factor is in

comparison to the stress that might be caused by a higher degree adversarialness, and might also contribute to a claimant's poor health post-MVA. Further research is warranted to address whether claimants, in retrospect, obtained the amount of compensation they were seeking and if the degree of adversarialness was worth the effort to do so.

Additionally, if an HCP chooses to use post traumatic amnesia (PTA) to make a differential diagnosis, they need to know that measuring PTA requires the use of a standardized test in a claimant's acute care stage of recovery (and not simply rely on a claimant's subjective recall of PTA months to years following the accident to make this differential diagnosis). An HCP needs to be made aware that a claimant's subjective measure of PTA can change, especially if questioned under oath as part of an examination for discovery. I propose that when a claimant, under oath, changes his or her recall of PTA to a substantially lesser degree, this leaves an HCP's credibility as a professional in question, if that HCP relied exclusively on a subjective measure of PTA to make the differential diagnosis of a more moderate to severe TBI.

### **5.8.3 Implications and Recommendations for Judicial System**

For the judicial system, another recommendation relates to a timely submission of a claimant's medical/rehabilitation evidence by a plaintiff lawyer to an insurance adjuster who is managing a claim. Section 5.1 (2) of the Fair Practices Regulation Act, implemented on July 1, 2012, states that the insurer, as a defendant to their insured in a claim, is required to reveal the existence of a policy of automobile insurance and disclose an insured driver's policy limits within 30 days of receipt of notice of claim. This study recommends that the Fair Practice Regulation Act also include a clause that requires the plaintiff lawyer to reveal the medical/rehabilitation evidence, for those proposed claims in excess of an insurance policy limit,

within 30 days following their receipt of this evidence. This action from plaintiff's counsel might help to reduce the amount of adversarialness on these types of claims files.

#### **5.8.4 Implications and Recommendations for Government**

The current research indicated that claimants who were at-fault for the MVA and who had sustained severe TBI accessed the maximum amount of health care goods and services from the no-fault system. My study, however, indicates that those with severe TBI who were at-fault for the MVA stopped claiming in the no-fault system because they had reached the maximum amount allowed. Alberta's Ministry of Finance should consider amending the current regulations that govern the amount of accident benefits coverage in the no-fault system to allow for an additional allowance for both monetary and temporal limitations for claimants who have sustained severe TBI. This could be in the form of an application for additional no-fault accident benefits (fashioned after Ontario's MVA no-fault benefits application for catastrophic determination). If a claimant can demonstrate ongoing need, additional benefits should be made available.

Alberta's MVA insurance compensation system should also consider implementing a verbal and or monetary threshold for at-fault claims, similar to Ontario or New Jersey's MVA insurance compensation system, as means of helping to reduce the number of mild TBI claims in the at-fault system. For example, as outlined by Financial Services Commission of Ontario (n.d.), in order to pursue an at-fault MVA claim in Ontario, two statutory requirements have been put in place: first, the verbal threshold states that a claimant must provide evidence that he/she sustained a permanent and serious impairment affecting an important bodily function; and second, the monetary threshold imposes a (CDN) \$30,000 deductible on at-fault claims that do

not exceed a total award of damages of (CDN) \$100,000. These two thresholds help to avoid claimants pursing an at-fault claim unless there is reasonable need to do so.

This thesis supports the assumption that it was important for claimants, injured by the fault of another, to be compensated for the pain and suffering they experienced from the initial impairment (regardless of whether their impairment resolved and they returned to work). Therefore, consideration should be given to provide a predetermined, one-time, lump sum award for pain and suffering as part of a no-fault claim. In this way, some claimants' rights to a fuller amount of compensation could be achieved through a no-fault claim, thus reducing their need to make such a claim in the at-fault system. Provisions could be put into place that if an at-fault claim is pursued, then the final award or damages would be reduced by the amount of pain and suffering paid for by the no-fault insurer.

### **5.8.5 Implications and Recommendations for Claimants**

The results of this study demonstrate that the current amount (CDN \$50,000) of Alberta no-fault accident benefits, available to claimants who have sustained a TBI, are sufficient to meet the medical and rehabilitation needs of the majority of claimants whose files were reviewed. This research could be of additional assistance to claimants and their families, and to advocacy groups, such as Alberta Brain Injury Association, who wish to urge Alberta's Ministry of Finance to address the funding matter related to those claimants who sustained severe TBI and used 100% of the accident benefits amount (especially so for those claimants who were liable for the MVA and therefore did not have access to a third party MVA insurance compensation system claim).

## References

- Atiyah, P.S. (1997). *The damages lottery*. Oxford: Hart Publishing.
- Baumgartner, T. M. (1978). *Sociocybernetics: An actor-oriented social systems approach* (R. F. Geyer & J. van der Zouwen Eds. Vol. 1). Boston: Kluwer Boston, Inc.
- Benton, A. L. (1989). Historical notes on the postconcussion syndrome. In H. S. Levin, H. M. Eisenberg & A. L. Benton (Eds.), *Mild head injury* (pp. 3-256). New York: Oxford University Press, Inc.
- Bertalanffy, L. (1968). *General systems theory: Foundation, development, applications*. New York: George Braziller Inc.
- Blau, T. H. (1984). *The psychologist as expert witness*. Toronto: John Wiley & Sons, Inc.
- Borg, J., Holm, L., Peloso, P. M., & Cassidy, J. D. (2004). Non-surgical intervention and cost for mild traumatic brain injury: results of the WHO collaborating centre task force on mild traumatic brain injury. *Journal of Rehabilitation Medicine*, 43 Supplement, 76-83.
- Brockett, P. L., Witt, R. C., & Aird, P. R. (1991). An overview of reinsurance and the reinsurance markets. *Journal of Insurance Regulation*, 9(3), 432-454.
- Brown, Craig. (1988). *No-Fault automobile insurance in Canada*. Agincourt: Carswell Co. Ltd.
- Canadian Institute for Health Information. (2006). Head Injuries in Canada: A decade of change (1994-1995 to 2003-2004) (pp. 2-31). Ottawa: CIHI.
- Canadian Institute for Health Information. (2010). Injury hospitalizations and socio-economic status: Analysis in brief (Vol. June, pp. 1-13). Ottawa: Canadian Institute for Health Information.
- Carroll, L. J., & Cassidy, J. D. (2004). Prognosis for mild traumatic brain injury: Results of the WHO Collaborating Centre Task Force on mild traumatic brain injury. *Journal of Rehabilitation Medicine*, 36(Suppl. 43).
- Carroll, L. J., Hogg-Johnson, S., Cote, P., van der Velde, G., Holm, L. W., Carragee, E. J., . . . Haldeman, S. (2008). Course of prognostic factors for neck pain in workers: results of the Bone and Joint Decade 2000-2010 Task Force on neck pain and its associated disorders. *Spine*, 33(4S), S93-S100.
- Cassidy, J. D., Carroll, L., & Cote, P. (2004). Mild traumatic brain injury after traffic collisions: A population-based inception cohort study. *Journal of Rehabilitation Medicine*, 36(Suppl. 43), 15-21.
- Cassidy, J. D., Carroll, L. J., Cote, P., Lemstra, M., Berglund, A., & Nygren, A. (2000). Effect of eliminating compensation for pain and suffering on the outcome of insurance claims for whiplash injury. *New England Journal of Medicine*, 342(16), 1179-1186.
- Chau, K. S. G. (2007). A brief review of traumatic brain injury rehabilitation *Annals of Academy of Medicine of Singapore*, 36(1), 31-42.
- Committee to Study Compensation for Automobile Accidents. (1932). *Report by the committee to study compensation for automobile accidents: To the Columbia University Council for Research in the Social Sciences*. Philadelphia: International Printing Company.
- Conrad, A. F., Morgan, J. M., Pratt Jr., R. W., Voltz, C. E., & Bombaugh, R. L. (1964). *Automobile accident costs and payments: Studies in the economics of injury reparation*. University of Michigan Press, Ann Arbor.

- Cooter, R. D., & Ulen, T. S. (1986). An economic case for comparative negligence. *New York University Law Review*, 61(1067), 1067-1110.
- Corrigan, J. D. (2001). Conducting statewide needs assessments for persons with traumatic brain injury. *Journal of Head Trauma Rehabilitation*, 16(1), 1-19.
- Cummins, J. D., & Tennyson, S. (1992). Controlling automobile insurance costs. *Journal of Economic Perspectives*, 6(2), 95-115.
- Dukelow, D. A., & Nuse, B. (Eds.). (1995) Dictionary of Canadian Law (Second ed.). Scarborough: Carswell Thomson Professional Publishing.
- Fearnside, M. R., & Simpson, D. A. (2005). Epidemiology. In P. L. Reilly & R. Bullock (Eds.), *Head injury: Pathophysiology and management* (Second ed., pp. 3-501). New York: Oxford University Press Inc.
- Ferguson, G. A. (1981). *Statistical analysis in psychology and education* (Fifth ed.). Toronto: McGraw-Hill Book Company.
- Financial Services Commission of Ontario. (n.d.). Retrieved May 28, 2010  
<http://www.fsco.gov.on.ca>
- Fleming, J. G. (1959). The Columbia study of compensation for automobile accidents: An unanswered challenge. *Columbia Law Review*, 59(3), 408-424.
- Fleming, J. G. (1992). *The law of torts* (Eighth ed.). Melbourne: The Law Book Company Ltd.
- Greater Toronto Rehab Network. (n.d.). Retrieved February 14, 2013, from  
<http://www.gtarehabnetwork.ca>
- Grieffenstein, M. F., & Cohen, L. (2005). Neuropsychology and the law: Principles of productive attorney - neuropsychologist relations. In G. J. Larrabee (Ed.), *Forensic neuropsychology: A scientific approach* (pp. 3-479). New York: Oxford University Press.
- Hale, W. B., & Cooley, R. W. (1912). *Handbook on the law of damages* (second ed.). St. Paul: West Publishing Company.
- Harrington, S. E., Niehaus, G. R., Kleffner, A. E., & Nielson, N. L. (2004). *Risk management and insurance* (Second Canadian Edition ed.). New York: McGraw-Hill Companies Inc.
- Heilbronner, R. L., Martelli, M. F., Nicholson, K., & Zasler, N. D. (2002). Brain injury and functional disorders part IV. *Journal of Controversial Medical Claims*, 9(3), 1-7.
- Hess, A. K. (1999). Practicing principled forensic psychology: Legal, ethical, and moral considerations. In A. K. Hess & I. B. Weiner (Eds.), *The handbook of forensic psychology* (Vol. Second Edition). Toronto: John Wiley & Sons, Inc.
- Hinkle, D. E., Wiersma, W., & Jurs, S. G. (1998). *Applied Statistics for the Behavioral Sciences* (Fourth Edition ed.). New York: Houghton Mifflin Company.
- Keeton, R. E., & O'Connell, J. (1965). *Basic protection for the accident victim: A blueprint for reforming automobile insurance*. Toronto: Little, Brown and Company.
- Keeton, R. E., & O'Connell, J. (1968). Excerpts from basic protection for the traffic victim - A blueprint for reforming automobile insurance *Dollars, delay and the automobile victim: Studies in reparation for highway injuries and related court problems* (pp. 3-486). New York: The Bobbs-Merrill Company, Inc.
- Keeton, R. E., O'Connell, J., & McCord, J. H. (Eds.). (1968). *Crisis in car insurance*. Urbana: University of Illinois Press.
- Kleffner, A. E., & Nielson, N. L. (2004). Auto insurance reform for Canada's Tort Provinces. *Assurances et Gestion des Risques (Insurance and Risk Management)*, 71(1), 91-121.

- Kraus, J. F., Black, M. A., Hessol, N., Ley, P., Rokaw, W., Sullivan, C., . . . Marshall, L. (1984). The incidence of acute brain injury and serious impairment in a defined population. *American Journal of Epidemiology*, 119(2), 186-201.
- Levin, H. S., O'Donnell, M. A., & Grossman, R. G. (1979). The Galveston Orientation and Amnesia Test: A practical scale to assess cognition after head injury. *The Journal of Nervous and Mental Disease*, 167(11), 675-684.
- Linden, A. M. (1965). The report of the Osgoode Hall study on compensation for victims of automobile accidents. Toronto: Osgoode Hall Law School.
- Linden, A. M. (1973). *No-Fault insurance: Past present and future* Toronto: The Law Society of Upper Canada.
- Linden, A. M. (1988). *Canadian tort law* (4th ed.). Toronto: Butterworths.
- Low, S., & Kiholm Smith, J. (1992). The relationship of alternative negligence rules to litigation behavior and tort claim disposition. *Law and Social Inquiry*, 17(1), 63-87.
- Maas, A. I. R., Stocchetti, N., & Bullock, R. (2008). Moderate and severe traumatic brain injury *Lancet Neurology*, 7(8), 728-741.
- Martelli, M. F., Zasler, N. D., Nicholson, K., & Hart, R. P. (2001). Masquerades of brain injury Part I: Chronic pain and traumatic brain injury. *Journal of Controversial Medical Claims*, 8(2), 1-7.
- Martelli, M. F., Zasler, N. D., Nicholson, K., & Heilbronner, R. L. (2001). Masquerades of brain injury - part II: Response bias in medicolegal examinations. *Journal of Controversial Medical Claims*, 8(3), 13-23.
- Matouk, C., J., Hutchinson, & Geurguerian, A-M. (2007). Acute and emergency management. In D. L. MacGregor, A. V. Kulkarni, P. B. Dirks & P. Rumney (Eds.), *Head injury in children and adolescents* (pp. 1-261). London: Mac Keith Press.
- McClusky, A. (2000). Paid attendant carers hold important and unexpected roles which contribute to the lives of people with brain injury. *Brain Injury*, 14(11), 943-957.
- O'Connell, J., & Kelly, C. B. (1987). *The blame game*. Toronto: D.C. Heath and Company.
- O'Connell, J., & Robinette, C. J. (2008). *A recipe for balanced tort reform: Early offers with swift settlements*. Durham: Carolina Academic Press.
- Osborne, C. A. . (1988). *Report of inquiry into motor vehicle accident compensation in Ontario*. Toronto: Ontario Ministry of the Attorney General
- Ministry of Financial Institutions.
- Paniak, C., Toller-Lobe, G., Durand, A., & Nagy, J. (1998). A randomized trial of two treatments for mild traumatic brain injury. *Brain Injury*, 12(12), 1011-1023.
- Reynolds, S., Paniak, C., Toller-Lobe, G., & Nagy, J. . (2003). A longitudinal study of compensation-seeking and return to work in a treated mild traumatic brain injury sample. *Journal of Head Trauma Rehabilitation* 18(2), 139-147.
- Russell, R. W. (1932). Cerebral involvement in head injury: A study based on the examination of two hundred cases *Brain*, 55(4), 549-603.
- Saskatchewan Government Insurance Office. (1967). Report to the Royal Commission on automobile insurance and related matters British Columbia. Regina: The Saskatchewan Government Insurance Office.
- Schmand, B., Lindeboom, J., Schagen, S., Heijt, R., Koene, T., & Hamburger, H. L. (1998). Cognitive complaints in patients after whiplash injury: the impact on malingering. *Journal of Neurology, Neurosurgery, and Psychiatry*, 64, 339-343.

- Schroeder, C. H. (1989-1990). Corrective justice and liability for increasing risks. *UCLA Law Review*, 37(440), 439-478.
- Snider, H. W., James, R., & Adams, J. F. (1973). Treating the automobile accident problem. Philadelphia: Temple University.
- Special Committee (Alberta). (1948). Report of the Special Committee to study all phases of automobile insurance (February 15, 1949 ed.). Edmonton: Department of the Attorney General (Alberta).
- Stephenson-Cooper, K. (1996). *Personal injury damages in Canada* (Second ed.). Toronto: Carswell.
- Sterner, Y., Toolanen, G., Gerdle, B., & Hildingsson, C. (2003). The incidence of whiplash trauma and the effects of different factors on recovery. *Journal of Spinal Disorders & Techniques*, 16(2), 195-199.
- Stevenson, V. R. (Ed.). (2007). *Consolidated Alberta Insurance Statutes and Regulations*. Toronto: Thomson Carswell.
- Symonds, C. P. (1928). Observations on the differential diagnosis and treatment of cerebral states consequent upon head injuries. *British Medical Journal*, 2(3540), 829-832.
- Symonds, C. P., & Russell, R. W. (1943). Accidental head injuries. *Lancet*, 1(6227), 1-34.
- Teasdale, G., & Jennett, B. (1974). Assessment of coma and impaired consciousness. *The Lancet*, July 13(2 (7872)), 81-84.
- Testa, J. A., Malec, F. J., Moessner, A. M., & Brown, A. W. (2006). Predicting family functioning after TBI. *Journal of Head Trauma Rehabilitation*, 21(3), 236-247.
- Toronto Acquired Brain Injury Network. (2006). A framework for the future planning of publicly funded acquired brain injury services in Toronto (pp. 4-58). Toronto: Toronto Acquired Brain Injury Network.
- Witt, R. C., & Urrutia, J. (1983). A comparative economic analysis of tort liability and no-fault compensation system automobile insurance. *Journal of Risk and Insurance* 631-657.
- Zafonte, R. D., & Martelli, M. F. (2002). Ethics in medicolegal evaluation and neurologic disability. *Journal of Controversial Medical Claims*, 9(3), 13-19.
- Zasler, N. D., Katz, D., & Zafonte, R. (2007). Clinical continuum of care and natural history. In N. D. Zasler, D. Katz & R. Zafonte (Eds.), *Brain injury medicine: Principles and practice* (pp. 3-1275). New York: Demos Medical Publishing.

## APPENDIX A: ANALYSIS OF SIX INFLUENTIAL NORTH AMERICAN STUDIES ON MVA INSURANCE COMPENSATION SYSTEMS

### A.1. Columbia Study (1932)

#### Overview of Columbia Study (1932)

Aim	<ul style="list-style-type: none"> <li>To study the problems and provide solutions for compensation from injuries caused by motor vehicle accidents (MVAs)</li> </ul>
Methods	<ul style="list-style-type: none"> <li>Data from 8,849 cases of personal injury and death caused by MVAs were examined in six USA jurisdictions from years 1926 to 1931 <ul style="list-style-type: none"> <li>The larger population formed a General Study; the fatal cases formed a Special Study (n = 917 cases)</li> </ul> </li> <li>Interviews<sup>68</sup> of claimant and their families were conducted to gain, first-hand, how seriously claimants had been injured, how their lives and the lives of their families had been affected, and what the facts were as to the receipt of payment,</li> <li>Interview of judges<sup>69</sup> to determine the problem of delay of settling cases caused by court congestion,</li> <li>Data was also obtained from public agencies and associations to include - Motor Vehicle Departments, Chiefs of Police, Coroners, US Census Bureau – records of the police and coroners and from Workers Compensation Board (WCB data was examined to understand the operations and cost of a no-fault plan to see how it could be used to compensate claimants in an MVA system).</li> <li>Review of following Laws: Common, Statute, and Constitutional</li> </ul>
Main Areas Addressed <sup>70</sup>	<ul style="list-style-type: none"> <li>This study mainly addressed economic loss of wages, and funeral and medical expenses; not property damage. It also addressed the distribution of the burden or loss on society</li> <li>It did not address loss associated with pain and suffering</li> </ul>
Main Conclusions (of interest to the PhD research)	<ul style="list-style-type: none"> <li>27% of the 4,425 permanent disability and temporary disability claimants were not insured</li> <li>87% permanent disability claims, and who had access to liability insurance, received a total payment of 45% of their aggregate loss (economic loss); only 17% of those uninsured received payment.</li> <li>Time to settle tort claims - average range from 1 to 3 years</li> <li>Most cases were resolved without trial</li> <li>Overall, burden of responsibility (to pay for health care costs) falls first upon the injured person or his family to pay for health care costs, then upon hospital, physicians, tradesmen, landlords, friends and the community at large to pay (if individual cannot pay)</li> <li>Committee recommended theoretical, No-Fault Insurance plan fashioned after the WCB plans already in place</li> </ul>

<sup>68</sup> Amount of claimants and their families who were interviewed was not identified (based on the researcher's review of this study)

<sup>69</sup> Amount of judges who were interviewed was not identified (based on the researcher's review of this study)

<sup>70</sup> Presentation of results in this study is complex. Therefore percentages not included in this overview.

Limits of the Study	<ul style="list-style-type: none"> <li>Adversarialness was not measured;</li> <li>Responsiveness measured as a delay in settling a claim—defined as date to settle claim from date of injury</li> <li>Recovery not measured – but “disability” defined as disability lasting more than one day</li> <li>Other definitions of disability used were:<sup>71</sup> <ul style="list-style-type: none"> <li>No disability – disability lasting one day or less</li> <li>Temporary disability – disability of more than one day, but full recovery anticipated</li> <li>Permanent disability (includes partial and total)</li> </ul> </li> <li>Provided only a theoretical analysis of a no-fault MVA insurance compensation system based on the WCB model</li> </ul>
Social Context (circa the year the study was complete)	<ul style="list-style-type: none"> <li>As of the year 1928 only the state of Massachusetts had compulsory liability insurance</li> <li>Several USA States had Financial Responsibility Laws (defined as once been deemed to be liable for one accident, then must show proof of financial responsibility to pay the next time driver causes an accident)</li> <li>All USA jurisdictions used strict contributory negligence (CN) law of the all-or-none principle – That is, even if the claimant’s actions had contributed to one percent of the fault of the accident, the claimant had no legal claim to recovery any amount from the at-fault driver</li> <li>No Canadian jurisdictions had compulsory liability insurance</li> <li>A few Canadian jurisdictions had Financial Responsibility Laws</li> <li>All Canadian jurisdictions had refined the CN to a comparative degree of CN – That is, the settlement amount would be reduced by the percentage of CN of the claimant</li> <li>No USA or Canadian Jurisdiction had no-fault MVA benefits</li> <li>Workman’s<sup>72</sup> Compensation Board (WCB) in place in most jurisdictions in USA, Canada, and in many European countries</li> <li>But no other public/social programs, such as old age security, were in place in any USA or Canadian jurisdiction</li> </ul>

## A.2. (AACP) Report (1964)

### Overview of Automobile Accident Cost and Payments (AACP) Report (1964)

Aim	<ul style="list-style-type: none"> <li>To gain an objective understanding of the Michigan MVA insurance compensation system for personal injuries from the claimant’s perspective (as opposed to the insurer’s perspective) as to the claimant’s incurred losses;</li> <li>To examine the attitudes of key players as to their level of satisfaction with: the amounted compensated and how fairly they were treated</li> <li>To examine European jurisdictions to understand their MVA schemes of compensation (England, Sweden, France, and Germany)<sup>73</sup></li> </ul>
Methods	<ul style="list-style-type: none"> <li>Review of police data for accidents that occurred during the year 1958 for select jurisdictions in Michigan;</li> </ul>

<sup>71</sup> Examples were provided for each category. E.g. Permanent Disability Case – “Child. A long period in the hospital. Foot partly immobile. No accident insurance. No liability compensation” (p. 230).

<sup>72</sup> Referred then as Workmen’s Compensation. Researcher chose to use the term WCB whenever this type of compensation system was referenced (to maintain writing consistency).

<sup>73</sup> The researcher did not review this aspect of the report in detail

	<ul style="list-style-type: none"> <li>Review of cases filed in court in during the year 1957 (a sample of 207 cases taken from this total was used in the study)</li> <li>Survey (use of a questionnaire of 2,782 persons drawn from police reports across 13 jurisdictions of Michigan State). <ul style="list-style-type: none"> <li>From this a subset of “serious” injury cases was identified (total of 504 serious cases). <ul style="list-style-type: none"> <li>In-depth, personal interviews were conducted of these 504 cases using a supplemental survey</li> <li>Primarily interviewed claimants. But, also interviewed plaintiff lawyers, defence lawyers, insured drivers and hospital staff for those claimants whose answers were thought to be exaggerated</li> </ul> </li> </ul> </li> </ul>
Main Areas Addressed	<ul style="list-style-type: none"> <li>Claimants’ economic losses (wage loss and medical expenses in USA dollars)</li> <li>Delays (defined as date from injury to settlement date)</li> <li>Serious injuries (defined by economic loss; greater than 3 weeks of hospitalization; and death or permanent disability)</li> <li>Also examined other compensation sources that the claimant accessed as a result of the MVA, such as private sources of insurance (e.g. life insurance) and other public sources of compensation (e.g. employer – sick leave and disability, WCB, social security, etc.,) – the purpose was to understand other sources available to MVA claimants</li> </ul>
Main Conclusions (of interest to PhD Study)	<ul style="list-style-type: none"> <li>Of all MVA claims, 65% received some amount of compensation from some source; <ul style="list-style-type: none"> <li>For those who received compensation from some source, 63% received compensation from private insurance (including 37% from an MVA claim)</li> </ul> </li> <li>Of the seriously injured, majority (70%) of economic loss was in the small to medium range; only 30% had losses in the large and very large range <ul style="list-style-type: none"> <li>Of the serious claims, the tort system (at-fault system) provided the largest portion of compensation (46%) when compared to other sources of compensation available to these claimants.</li> <li>Others important sources of compensation was from claimant’s medical insurance plan and life insurance plan (27%) and some received compensation from social programs (13%)</li> </ul> </li> <li>Of those that received compensation from the tort system, their claimed loss (defined by the amount of economic loss) is as follows: <ul style="list-style-type: none"> <li>Small loss - 64% received over 76% of their loss</li> <li>Large loss - 29% received over 76% of their loss</li> <li>Very large loss – only 8% received over 76% of their loss <ul style="list-style-type: none"> <li>Conclusion based on examination of amount that gets compensation based on groups of small, large, and very large loss - a large percentage of those with small losses were overcompensation whereas only a small percentage of those with large and very large were overcompensated – those with large to very large losses received only a fraction of what they had lost (wages and reimbursement payments for medical bills)</li> </ul> </li> </ul> </li> <li>For MVA injury cases in the courts, delays for the large loss claims (\$5K - \$25K) took the longest to settle (66% took more than 2 years)</li> <li>At-fault insured drivers played a minor role in the claim – most did not know how the cases settled (e.g. negotiated or court settled) or for what amount</li> <li>From review of hospital records, there was a tendency for claimants (when interviewed) to over report their medical losses (by an average of 30%)</li> <li>Study also examined claimants’ degree of “hostility” about the claim<sup>74</sup> (defined in the study as low, medium and high “hostility”) towards the settlement amount, the following applies: <ul style="list-style-type: none"> <li>20% of “low hostility” claimants received over 150% of economic loss (high percentage payout) compared to 15% of “high hostility” claimants who received</li> </ul> </li> </ul>

<sup>74</sup> This was based on set of questions that were developed to determine a claimant’s degree of hostility.

	<ul style="list-style-type: none"> <li>over 150% of economic loss (low percentage payout)</li> <li>○ 34% of “low hostility” claimants received a low percentage payout compared to 66% of “high hostility” claimants received a low percentage payout</li> <li>○ 62% of ”low hostility” claimants that received a high percentage payout believed the settlement to be generous and fair compared to only 22% of “high hostility” claimants that received a high percentage payout believed the settlement to be generous and fair</li> <li>• Of those interviewed, the majority (59%) were satisfied with the amount they received and most (72%) at-fault drivers felt they had been treated fairly</li> </ul>
Limits of the Study	<ul style="list-style-type: none"> <li>• No pain and suffering loss amount included as part of settlement amount</li> <li>• No comparative analysis between an at-fault and no-fault system<sup>75</sup> on any measures (only examined at-fault system)</li> <li>• No analysis on recovery of claimant</li> </ul>
Social Context (circa year the study was complete)	<ul style="list-style-type: none"> <li>• By 1958 only three USA States (New York, North Carolina, and Massachusetts) had compulsory liability MVA insurance</li> <li>• Saskatchewan was the only Canadian jurisdiction to implement a form of no-fault MVA insurance and have a government run MVA scheme of insurance; yet still no Canadian jurisdiction had compulsory liability MVA insurance plan (include Saskatchewan’s plan)</li> <li>• Some jurisdictions had implemented a Financial Responsibility Law defined as – If found liable for any accident must show proof of financial ability to pay (up to a maximum) or have your car impounded until such time as this proof is presented. This change was thought to create both a deterrent and punishment component to try to reduce accidents</li> <li>• Many jurisdictions had also implemented an Unsatisfied Judgment Fund – For those who were successful in proving fault of another could access a minimum limit via this fund if the at-fault party could not make good on the loss (for various reasons)</li> <li>• Other sources of public compensation, such as employee disability benefits, were now in place in many USA and Canadian Jurisdictions. E.g. Old age and disability benefits, and Veterans Affairs benefits</li> </ul>

### A.3. Keeton & O’Connell Plan (1965)

#### Overview of Keeton & O’Connell Plan – Basic Protection Plan for Traffic Victims (1965)

Aim	<ul style="list-style-type: none"> <li>• To demonstrate that the majority of claimants of an MVA would receive adequate compensation, regardless of fault, using basic forms of no-fault compensation</li> </ul>
Methods	<ul style="list-style-type: none"> <li>• Review of selected studies such as Columbia Study and AACP study.</li> </ul>
Main Areas Addressed	<ul style="list-style-type: none"> <li>• Economic loss</li> <li>• Delay – defined as time of settlement from date of injury</li> </ul>
Main Conclusions	<ul style="list-style-type: none"> <li>• Identified that 10% to 15% of drivers still not insured</li> <li>• Recommended a no-fault MVA insurance compensations system to replace an at-fault system, referred to as the Basic Protection Automobile Insurance Plan. This plan outlined 27 items of basic needs to be covered and how it should be covered – mainly derived from other forms of insurance coverage already in use, but payable to the claimant without regard to fault – (with some exclusions in place)</li> </ul>
Limits of the Study	<ul style="list-style-type: none"> <li>• No variables of cost, adversarialness, responsiveness of at-fault system measured; only a reiteration of past case studies – no systematic analysis</li> </ul>

<sup>75</sup> The study only included these European countries to identify their sources of reparations. E.g. England’s National Health Service.

	<ul style="list-style-type: none"> <li>Theoretical, no-fault MVA insurance compensation scheme outlined as an alternative compensation system to an at-fault system</li> <li>No comparative analysis between a no-fault and at-fault MVA insurance compensation system plan</li> </ul>
Social Context (circa year the study was complete) <sup>76</sup>	<ul style="list-style-type: none"> <li>By 1965, most USA and Canadian jurisdictions had implemented other Statute Laws for MVA claimants, such as the Unsatisfied Judgement Fund Act and Uninsured Motorist Coverage fund</li> <li>Most jurisdictions still covered by Financial Responsibility Laws</li> </ul>

#### A.4. Osgood Hall Study (1965)

##### Overview of Osgoode Hall Study (1965)

Aim	<ul style="list-style-type: none"> <li>To determine the financial impact of compensating victims of automobile accidents in Ontario</li> </ul>
Methods	<ul style="list-style-type: none"> <li>Statistics analysed for MVAs reported in the calendar year of 1961 for accidents occurring in one jurisdiction in Ontario (county of York [mainly Peel Region, Halton, Hamilton] – excluded Metro Toronto, North York and Etobicoke)</li> <li>Interviews (surveys) conducted in 1964 to ensure that all majority of litigation (of accidents that occurred in 1961) would be concluded and the injuries, rehabilitation, and recovery would almost be complete</li> <li>11,870 accidents – comprising of 174 fatally injured; 1,283 seriously injured; and 10,413 minor injuries. <ul style="list-style-type: none"> <li>From this, a sample was taken for statistical analysis : <ul style="list-style-type: none"> <li>all 174 fatally injured cases included (100% of all accidents);</li> <li>600 of the seriously injured included (47% of the seriously injured); and</li> <li>400 of the minor cases included (4% of the minor)</li> </ul> </li> <li>From this a sample was taken for one-on-one interviews (590 total) <ul style="list-style-type: none"> <li>57 fatal (33%);</li> <li>307 of the serious (50% of those selected for the study); and</li> <li>226 of the minor (57%)</li> </ul> </li> <li>Personal interviews and review of hospital and legal records where necessary (e.g. if respondent had answered “I don’t know,” or factual information sketchy) – laws students conducted the interviews using a questionnaire</li> </ul> </li> </ul>
Main Areas Addressed	<ul style="list-style-type: none"> <li>Personal injury examined (no property damage examined)</li> <li>Economic loss (total tort loss defined as economic loss from tort)</li> <li>Total non-tort recovery (e.g. welfare, WCB, employee benefits);</li> <li>Combined total of tort and non-tort loss – the following loss was then derived from this: <ul style="list-style-type: none"> <li>a total of recoveries to economic loss</li> </ul> </li> <li>Then of the serious claims a subset (222 serious cases) were examined for loss of general damages (pain and suffering – referred to as a total legal loss when economic and pain and suffering combined) <ul style="list-style-type: none"> <li>Based on the opinion of a “senior member of the Ontario Bar Association” who was used to assess these. That is, the cost for pain and suffering hypothetically derived; it was not an actual cost received.</li> </ul> </li> </ul>
Main Conclusions	<ul style="list-style-type: none"> <li>The estimate of the total of tort recovery was 37.2% of economic loss. However the majority of the claimants (54%) received nothing at all from the tort recovery, many received varying portions of</li> </ul>

<sup>76</sup> While not expressly noted, the social context as per the AACP Report (1964) applies here.

	<p>what they lost (17%) and a fair amount (29%) received more than what they had lost (when one considers economic loss and loss from pain and suffering and double recovery laws). Of those that didn't receive anything, it was most likely due the claimant not being able to prove liability.</p> <ul style="list-style-type: none"> <li>• Of all those injured, 86% had some non-tort recovery, representing 23% of the total economic loss</li> <li>• For combined tort and non-tort recovery, 95% of the claimants received some compensation. The total amount recovered by all injured claimants was 60% of the total economic loss.</li> <li>• Overall, the picture presents the following: <ul style="list-style-type: none"> <li>• Those with minor injuries fared better (104% of total losses were recovered from combined tort and non-tort recovery) compared to those who were seriously injured (74% of total losses were recovered) and compared to those families who suffered a fatal loss (13% of total losses were recovered)</li> <li>• When those 222 of the serious cases were then examined to determine their hypothetical legal losses (that is what they would have likely obtained for both pain and suffering and economic loss if their cases were tried in court) – then the total legal costs to the actual tort recovery was calculated. Overall the majority of the seriously injured whose losses were large received anywhere from nothing to 12%.</li> <li>• Recognizes what other studies have concluded: <ul style="list-style-type: none"> <li>◦ Tort system is slow, inequitable, costly to administer</li> <li>◦ With the prevalence of personal automobile travel compensation now exists within the realm of social justice (not corrective just) as it is one of poverty and social welfare and that it should not matter that an injury is caused by a slip or fall in someone's home or from an MVA, --everyone who becomes disabled is deserving of compensation from personal injury loss</li> </ul> </li> <li>• At-fault system still useful in that it forces the majority of cost to be borne by the negligent driver (not the rest of society). Therefore, make changes to the present (at-fault system), rather than replacing it with a no-fault systems</li> <li>• Recommended that some form of accident insurance coverage (no-fault) be added as a mandatory part of all SPF 1 automobile insurance policies.</li> <li>• The protection of individual freedoms and resolution of disputes should not be entrusted to government bureaucrats but to the courts (judges and juries)</li> </ul> </li> </ul>
Limits of the Study	<ul style="list-style-type: none"> <li>• No comparative analysis between an at-fault and no-fault system conducted</li> <li>• Only economic loss was analysed</li> <li>• Delays caused by having to sue the at-fault system recognized as a problem but delay not measured</li> <li>• Serious injury defined by economic loss of wages and out of pocket medical expenses</li> </ul>
Social Context	<ul style="list-style-type: none"> <li>• Recognition of the various forms of private and social insurance plans as well as tort recovery available to most claimants which allows for some form of compensation</li> <li>• Note that this Canadian study was conducted around the same time-frame as the AACP report. See social context in AACP for overview.</li> </ul>

## A.5. Saskatchewan Study (1973)

### Overview of Saskatchewan Report (1973)

Aim	<ul style="list-style-type: none"> <li>• 1) To describe Saskatchewan's experience pertaining to MVA insurance compensation since its inception in 1946;</li> <li>• 2) To present summary information regarding the extent of individual and total losses from MVAs in Saskatchewan;</li> <li>• 3) To compare Saskatchewan's system and specific jurisdictions in the USA;</li> <li>• 4) To summarize a given years' worth of operations data for the Saskatchewan plan from claimants' perspective</li> </ul>
Methods	<ul style="list-style-type: none"> <li>• Saskatchewan Government Insurance Office (SGIO) data from all accidents which occurred</li> </ul>

	<p>between May 1, 1962 and April 30, 1963<sup>77</sup></p> <ul style="list-style-type: none"> <li>• Sample selection focused on interviews pertaining to three key areas: 1) accidents; 2) accident claimants; 3) other interested parties</li> <li>• Examined bodily injury and property damage for accidents involving fatalities and injuries; Other interested parties interviewed were plaintiff lawyers, treating physicians, adjusters, and SGIO personnel</li> <li>• First – random, numeric selection procedure from all MVA accidents in one year (as outlined above)</li> <li>• Second – random selection of accident claimants was drawn from the larger sample – weighted appropriately so as to provide a representative sample based on the participants in the above three areas examined – 1) accidents; 2) accident claimants; and 3) other interested parties</li> <li>• Data from interviews of 1,063 victims of MVA accidents was then reviewed</li> </ul>
Main Conclusions (of interest to PhD study)	<ul style="list-style-type: none"> <li>• Nearly all of the claimants bore no excess of medical expense personally due to the public hospital plan; SGIO also incurred little expense for health care services paid outside of the public hospital plan due to claimants accessing funding from other sources; (93% of bodily injury claims small loss claims)</li> <li>• Approximately 26% of victims recovered some amount from an additional source (other than the MVA claim)</li> <li>• 52% of claims settled within 3 months of less; only 0.3% took longer than two years to settle</li> <li>• 83% of claimant interviewed were satisfied with the final settlement</li> <li>• Of the claims that were settled in court, 78% of victims indicated that their testimony in court was biased toward presenting information that benefited their interests</li> </ul>
Limits of Study	<ul style="list-style-type: none"> <li>• Measure of responsiveness of the system in terms of time to settlement from date of injury (same as other studies' definitions of delay)</li> <li>• Measured claimant satisfaction of compensation received</li> <li>• Compulsory liability insurance in Great Britain, New Zealand, and majority of states in Australia and one jurisdiction in US (Mass) was examined</li> </ul>
Limits of the Study	<ul style="list-style-type: none"> <li>• No comparative analysis between a no-fault and at-fault system on measures of cost, adversarialness, or responsiveness (of a claims management process)</li> </ul>
Social Context	<ul style="list-style-type: none"> <li>• Saskatchewan government had implemented the first North American government operated MVA scheme in 1946 (SGIO) both liability and no-fault benefits, but Compulsory liability laws still not implemented for all who drive (Compulsory liability was only for a subset of drivers – buses, taxis, and those who had already caused an accident – so had to prove financial responsibility to be allowed to drive)</li> <li>• Even though SGIO formed, the Saskatchewan government also allowed private insurance companies to sell additional coverage</li> <li>• Tax supported hospitalization plan at the provincial level was also made available since 1946</li> <li>• Inception of a universal (Canada-based) public Medicare system being implemented – for MVA claimants access to hospital-based care was available without regard to private insurance or other financial capacity – therefore a large portion of the medical costs were not borne by an MVA insurance compensation system</li> <li>• From a legal perspective - General attitude is toward what's best for the "social mean" rather than the total economic loss of the individual;</li> <li>• No-fault MVA insurance compensation systems in Sweden, Denmark and Finland</li> <li>• All Canadian jurisdictions had some form of at-fault add-on accident benefits plan, except for Quebec (which had announced that it was changing to a pure no-fault system)</li> </ul>

<sup>77</sup> Study identified that this year was chosen primarily because data on these accidents was complete, and in the practical sense, settlement of claims and degree of recovery for claimants' injuries were more or less final.

## A.6. Osborne Report (1988)

### Overview of Osborne Report (1988)

Aim	<ul style="list-style-type: none"> <li>To examine whether the implementation of either a no-fault MVA insurance compensation system plan (managed via the private insurance sector) or a publicly governed MVA system would offset the rising costs of MVA liability insurance in Ontario</li> </ul>
Methods	<ul style="list-style-type: none"> <li>Advisory Committee created to examine the aforementioned objectives (in conjunction with other matters pertaining to insurance) <ul style="list-style-type: none"> <li>Committee made up of representatives from: The Ontario insurance industry, the Ontario Bar Association, and the public</li> </ul> </li> <li>Requested written submissions using advertisements in newspapers and journals in Ontario <ul style="list-style-type: none"> <li>340 submissions were reviewed from eight key players groups (such as the insurance industry, legal industry, health care professionals, governments, consumers and claimants)</li> </ul> </li> <li>Public hearings were held in six jurisdictions throughout Ontario (public hearing dates and locations were advertised in newspapers and other forms of media);</li> <li>Council also met with other key players in other jurisdictions such as Manitoba, Saskatchewan, BC, Quebec and US states – Michigan, Pennsylvania, Florida, NY, and Minnesota, DC, England, Germany, and Switzerland, France;</li> <li>Three surveys conducted by an actuary: <ul style="list-style-type: none"> <li>First pertained to bodily injury claims closed during 1986 – 1,594 claims files were reviewed for costs;</li> <li>Second pertained to accident benefits claims for accidents which occurred in 1985</li> <li>Third dealt with ongoing bodily injury liability claims which were closed during a six week period in 1987</li> <li>Overall, the purpose of the surveys was to examine and break down both liability insurance and accident benefits payments to identify the components of claims paid, the economic injury profiles of claimants, transaction costs, and collateral sources of compensation</li> </ul> </li> <li>Finally, interviews were conducted of insurance company executives to present a profile of the MVA business.</li> </ul>
Main Areas Addressed	<ul style="list-style-type: none"> <li>Economic loss and pain and suffering costs were analysed from a subset of at-fault MVA insurance compensation systems claims files</li> <li>Economic trends of Accident Benefits costs were also analysed from years 1975 to 1986 based on cost per vehicle, not individual claims</li> <li>Issues of constitutionality were also examined pertaining to pure and threshold no-fault schemes and related issues</li> <li>Road safety was also examined (<u>incentives and deterrence</u>)</li> </ul>
Main Conclusions (of interest to this PhD research)	<ul style="list-style-type: none"> <li>Overall, close to half of the settlement costs for at-fault claims (45.6%) was for general damages; 10% was for future employment income, 13.3% was for loss of income; 1.4% was for future care costs, and 2.5% was for past medical (e.g. funeral, etc.).</li> <li>When broken down by small, medium and large loss claims (using ranges of settlement costs) the following results emerged: <ul style="list-style-type: none"> <li>Small loss claims: 70.5% of amount was for pain and suffering; 10% of amount was for past employment income was; 2.6% of amount was for past medical expenses; and there was no amount for either future cost of care or for future income loss</li> <li>Medium loss claims: 47.2% was provided for pain and suffering; 16.7% was on loss of past employment; 3% of past medical; and 3% of future employment</li> <li>Large loss claims: 27% was provided for pain and suffering; future income loss was 25.5%; past income loss 11.5%; past medical 1.4%; and future care is 4.1%</li> </ul> </li> <li>Strong belief among key players in the Ontario MVA system (at-fault at that time) was that the less severely injured were being generously compensated. That is, claimants with small losses</li> </ul>

	<p>received more in the way of damages for pain and suffering</p> <ul style="list-style-type: none"> <li>• Claimants that need rehabilitation were not getting immediate access because insurers were taking the approach that cost must first be incurred and then reimbursed. This resulted in no one, including claimants and HCPs, willing to incur cost first and then hope to get paid later. (p.162) – resulted in delay of rehabilitation</li> <li>• Study cited a lack of understanding of the effectiveness of rehabilitation</li> <li>• Pertaining to accident benefits, Osborne p. 164 “IBC data suggest that very few cases have involved rehabilitation expense of more than \$25,000.00.” (IBC data states the \$25,000.00 limit reached in about 30 cases per year or in approximately 0.1% of the cases in which Section B medical payments were made</li> <li>• Osborne provided recommendations, which included: <ul style="list-style-type: none"> <li>• Accident benefits should be increased from \$25,000 to \$500,000 (but no rationale provided as to the reason for this amount);</li> <li>• Could not see any cost savings from going to a government run scheme</li> <li>• No-fault and at-fault systems could live a “peaceful coexistence”.</li> <li>• Rehabilitation should be clearly defined and benefits should be made available to the claimant based on his or her treating HCPs opinions and not on the opinion of the insurer’s independent medical assessments</li> <li>• While a threshold no-fault system was not recommended, Osborne indicated that there should be a threshold of recovery for pain and suffering awards based on a cap for the less serious cases</li> </ul> </li> </ul>
Limits of the Study	<ul style="list-style-type: none"> <li>• No data from claims files reviewed by Committee; participating insurance companies provided their own data; data also supplied by Insurance Bureau of Canada (IBC) <ul style="list-style-type: none"> <li>◦ This point is relevant because (and as pointed out by Osborne) insurance companies controlled the type of data that was provided to the committee for review</li> </ul> </li> <li>• The structure of Ontario’s privately managed MVA system was analysed and compared to the structure of a few publicly run schemes – BC, Manitoba, and Saskatchewan. The focus was to examine the role that the government should play in the regulation and delivery of MVA insurance compensation. No comparative analysis of measures of cost, adversarialness, or responsiveness of the systems were undertaken – only anecdotal information was provided</li> <li>• This was the first study to take a close look at the rehabilitation of claimants, but no empirical measures were analysed – only anecdotal information was provided</li> </ul>
Social Context	<ul style="list-style-type: none"> <li>• By 1988 most jurisdictions in USA and Canada had implemented compulsory liability MVA; <ul style="list-style-type: none"> <li>• Majority of Canadian jurisdictions had at-fault MVA insurance compensation scheme with add-on no-fault benefits</li> </ul> </li> <li>• Some USA jurisdiction had threshold no-fault MVA schemes</li> <li>• Reimbursement of hospital health care costs for MVA claimants were changed from a case-by-case basis to a lump sum reimbursement based on the “Bulk Subrogation Agreement” – Ontario, and other such Agreements in other jurisdictions</li> <li>• By 1988, three Ontario commissions had recommended some form of a no-fault system</li> </ul>

## **APPENDIX B: APPENDICES FOR METHODS CHAPTER**

### **B.1. Sample of Letter of Introduction to Insurance Companies**

April 8, 2009

[Insert Name, Title, Address]

Dear [Insert name and title],

My reason for writing is to acquaint you with a research project that I am pursuing, and that I trust will be of interest to you; with the hope that your firm might participate in the project. The study involves a comparison of at-fault and no-fault motor vehicle accident (MVA) insurance systems in Canada and whether such differences influence access to claims benefits and how, in turn, this affects recovery, if at all, for claimants who have sustained a traumatic brain injury. It would be helpful to have data from several insurance companies both to ensure that the data gathered provides a valid reflection of experience in the at-fault insurance system in Alberta, and to provide a sufficient number of files for analysis.

One of the goals of an MVA insurance system, in providing health care benefits to claimants following on a motor vehicle accident, is to maximize his or her level of recovery so that he or she can return to a productive lifestyle in keeping with his or her pre-accident status. Yet tension is created in balancing medical and rehabilitation costs against affordable automobile insurance for all insured.

How to design an efficient, equitable, and affordable MVA insurance system has been a well debated topic among stakeholders and scholars for the last 70 years. However, key aspects of the design, such as how long it takes an insurer to respond to a request for a benefit, the timing of receipt of a benefit, the process of disputing a denied benefit, and costs are factors which have never been examined related to whether or not these affect recovery. It is anticipated that the outcome of this study will provide answers to these questions: As a means to improve awareness among key stakeholders and to spawn additional research of this nature.

While many insurers tend to support research of this nature, privacy and governance issues related to how a claimant's confidential information will be handled and the impact this type of data collection would have on internal resources are the main concerns for potential participating insurance companies. These are real concerns and of a nature that is shared by the stakeholders when conducting this type of research.

Let me assure you, for both personal and ethical reasons, the research I am proposing seeks to protect against the very issues of which your firm may have concerns. At the same time, prior research in both the MVA insurance field and other health studies have shown that these concerns can be satisfactorily addressed when keeping in mind issues that are in the public interest. The research proposal, to include the manner in which data will be gathered and kept confidential, has received approval from the University of Calgary's Health Research Ethics Board. I have attached a copy along with an Executive Summary. My belief is that this research

is of such broad public interest that your firm will see the benefit in participating and that together, we would address these concerns.

I look forward to further discussions about your participation in this very worthwhile research project.

Regards,

L.Task

Lee Tasker, PhD candidate, University of Calgary

## **B.2. Sample of Confidentiality Agreement**

### **CONFIDENTIALITY AGREEMENT**

I agree that the conduct of my research will be confined to the scope of the research detailed in my thesis proposal, which has been approved by the Conjoint Health Research Ethics Board of the University of Calgary Faculty of Medicine.

Proper consent was obtained by [Insurer Provider 1] prior to conducting the research. I specifically understand that I am forbidden to remove any original documentation from the [Insurer Provider 1's] company premises.

The [Insurer Provider 1's] name and logo and all related products and service names may not be reproduced without express written consent from [Insurer Provider 1].

I further understand that my access to original documentation or physical access to any private [Insurer Provider 1] facility is limited to a time period when a designated representative from [Insurer Provider 1] is present and aware of this access.

I have read and agree to abide by these conditions.

Signed at \_\_\_\_\_, this \_\_\_\_\_ date of Sept 1, 2010.

Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Name: \_\_\_\_\_ Signature: \_\_\_\_\_

## **B.3. Sample of Letter to Claimants Requesting Participation**

June 2, 2009

ATTENTION:

Dear :

Timely access to medical benefits is an important topic for all Canadians. Along with other Insurance Companies, [Insurer Provider 1] has been invited to and has agreed to participate in an important Canadian research project entitled:

“Comparison of “at fault” and “no fault” motor vehicle accident insurance systems in access to claims benefits for those who have sustained traumatic brain injury”.

The research has received ethics approval through the University of Calgary and the disclosure of information from [Insurer Provider 1] to the researchers meets with Alberta’s PIPA guidelines (Personal Information Protection Act). The study is being conducted through the Department of Community Health Sciences at the University of Calgary, Alberta. The lead researcher is Dr. Aldred Neufeldt and the doctoral candidate who will be collecting the data is Ms. Lee Tasker.

You have been identified as someone who has experienced a head injury as a result of a motor vehicle accident. Information will be reviewed, summarized and reported on in general terms, unless you specifically withhold consent to have this happen. We would like to reassure you that in the course of the data collection for this study, no individual file or file information will leave this office. All data is to be collected by an independent assessor and expressed in terms of total scores or averages. Please note that no identifying information for any individual claimant will be collected or reported. Unless we hear otherwise from you by June 30, 2009, your information will be included in the research.

Please feel free to call either Lee Tasker (403) 217-5446 at the University of Calgary or [Internal Rehabilitation Specialist], at [phone number of Insurer Provider 1] if you require further information.

Sincerely,

[Vice President], Claims Department  
[Insurer Provider 1]

## B.4. Sample of Displays Used for Data Gathering From Claims Files

### B.4.1. Sample of Accident Benefits Type and Cost Display

BN001\_1\_02 Documents in File and Continuum of Care Working Copy - Microsoft Excel

The screenshot shows a Microsoft Excel spreadsheet titled "BN001\_1\_02 Documents in File and Continuum of Care Working Copy - Microsoft Excel". The spreadsheet contains data related to accident benefits, specifically goods and services. The data is organized into several sections:

- Section 1 (Rows 1-3):** Goods & Services, BN001\_1\_02.
- Section 2 (Rows 4-12):** A table with columns: Health Care Goods & Services, Non-Medical Goods & Service, Cost, Funding Source, and Data Source. It lists items like Devices, Physiotherapy, Occupational Therapy, Ambulance, Attendant Care, Fire & Rescue, and a total for "Medical Payments" of \$1,193.00.
- Section 3 (Rows 13-21):** A table with columns: Payment Details, Amount, and Date. It details payments for Physiotherapy sessions, PT Assessment, AB2 form, AB 1a, and Ambulance services, totaling \$1,192.90.
- Section 4 (Rows 22-25):** Total Disability information, showing Period Ending (date) for 10-Sep-07 and 14-Sep-07.
- Section 5 (Row 27):** A calculation cell containing the formula "444 X 80% = 355.20".

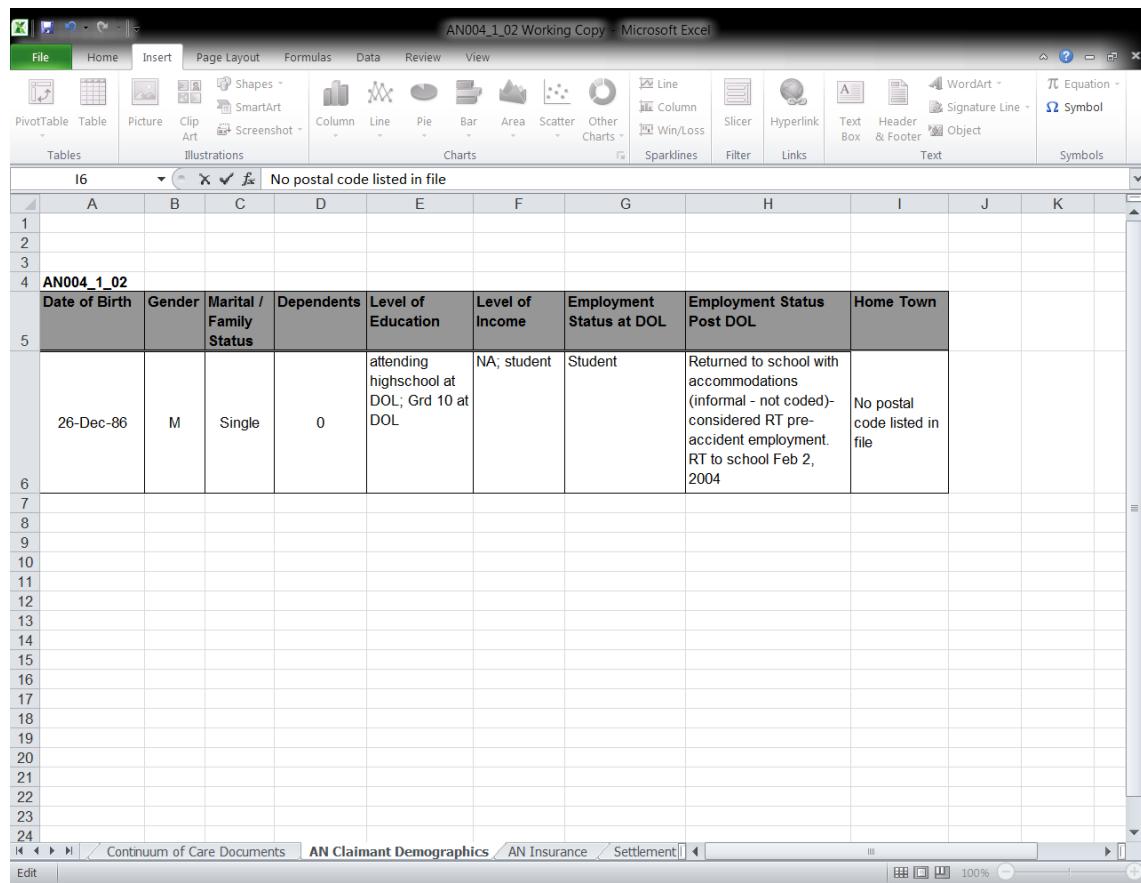
The Excel interface includes a ribbon bar with tabs like Home, Insert, Page Layout, Formulas, Data, Review, and View. The status bar at the bottom shows "Ready" and "100%".

#### B.4.2. Sample of At-Fault Claimant Insurance Information Display

AN004\_1\_02 Working Copy - Microsoft Excel

	Date of Loss	Type of Vehicle*	Accident Details*	MVA Insurance Coverage in addition to standard SPF policy	Date Claim Opened	Date Claim Closed	Status of Claim Closure	Means of Settlement	Relationship to Name Insured (e.g. self, wife, child)*	Legal Representation (Plaintiff)	Primary Active Policy
5	04-Oct-03	1998 Dodge RAM 3500 Wagon	SEF 44 loss. Insrd's son passenger in school van on volleyball field trip. Unseatbelted when T/P truck hit van; insured driver of TP was charged and convicted of drunk driving	SEF 44 claim; 1M	Oct 28, 2003	10-May-10	Closed	settled after private mediation	Son, SEF 44 on father's insurance; clmt in a school van	Yes	set
6	*Note: Details omitted for snapshot to maintain claimant confidentiality										
7	Continuum of Care Documents / AN Claimant Demographics / AN Insurance / Settlement										
8											
9											
10											
11											
12											
13											
14											
15											

#### B.4.3. Sample of Claimant Demographics Display



The screenshot shows a Microsoft Excel spreadsheet titled "AN004\_1\_02 Working Copy - Microsoft Excel". The ribbon menu is visible at the top, showing tabs for File, Home, Insert, Page Layout, Formulas, Data, Review, and View. The "Insert" tab is selected. The main content is a table titled "AN004\_1\_02" located in cell A4. The table has the following structure:

	Date of Birth	Gender	Marital / Family Status	Dependents	Level of Education	Level of Income	Employment Status at DOL	Employment Status Post DOL	Home Town
5	26-Dec-86	M	Single	0	attending highschool at DOL; Grd 10 at DOL	NA, student	Student	Returned to school with accommodations (informal - not coded)- considered RT pre-accident employment. RT to school Feb 2, 2004	No postal code listed in file
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									

The status bar at the bottom shows "Continuum of Care Documents AN Claimant Demographics AN Insurance Settlement" and "Edit". The zoom level is set to 100%.

#### B.4.4. Sample of Claims Management by Continuum of Care Display

The screenshot shows a Microsoft Excel spreadsheet titled "AN004\_1\_02 Working Copy - Microsoft Excel". The table has the following structure:

	Claims Management Process	Continuum of Care	Document Type Per Key Process	Who's Talking	Produced By	Role	Person ID	Purpose	Opinion(s) / Conclusion(s)	Disc
1	File #									
2	AN004\_1\_02									
3	Medical Intervention and Rehabilitation									
4	Med Rehab	Early Intervention: On Scene & ER	Ambulance Crew Report (British Columbia)	AMBL	AMBL	D14		to provide care	"at scene 2048; at destination 2105; chief complaint: unresponsive, 2 vehicle MVA pt was ejected found ground alongside van...GCS = 3; unresponsive; facial cuts; facial bleeding (min); pt combative"	
6	Med Rehab	Early Intervention: On Scene & ER	ER Department	PHYS-ATT	PHYS-ATT			to provide care	brought in by ambulance time:2120 GCS 15/15, ... time: 2130 GCS = 10; time:2145 GCS 12; time: 2215 GCS 8; transfer to GP via ambulance@2300".	
8	Med Rehab	Early Intervention: On Scene & ER	Ambulance Crew Report (British Columbia)	AMBL	AMBL	D14		to provide care	"at scene 2300, time vital sign 2300; GCS 10. chief complaint: head injury; 2 vehicle MVA ejected, good health...facial cuts, twitching by 4 [limbs]...blood on nose	
9	Med Rehab	Early Intervention: On Scene & ER	Ambulance Crew Report (British Columbia)	AMBL	AMBL	D14		to provide care	"Chief Complaint: Head injury...GCS 11/15...state of consciousness AUPU = Pain...2 vehicle MVA ejected	
10	Med Rehab	Early Intervention: On Scene & ER	ER Department Report	PHYS-ATT	PHYS-ATT	G4		to provide care	"brought in by ambulance intubated...combative. No LOC, bloody nose. GCS 15/15...vital signs record...GCS 10/15...GCS 15/15...GCS 8/15 [prepared for transfer to hospital that could treat traumatic brain injury]".	State:
11	Med Rehab	Early Intervention: On Scene & ER	Air Ambulance	AMBL	AMBL	V13		to provide care during transfer	"out-patient transfer. 06:19 [8 hours after accident]. GCS 3/15 intubated...sedated..semi-conscious...pt transferred well no problems"	
	Med Rehab	Hospital-Based: In-patient ICU & Cont Care	Pediatric ICU report	PHYS-ATT	PHYS-ATT	J14		to provide information	"05:28. patient is to be flown via fixed wing aircraft to Edmonton and initially admitted to the Stollery PEDS ER. Patients ETA to Edmonton approx 0700...intubate for transport. If level of consciousness	

#### B.4.5. Sample of Document Type Display

The screenshot shows a Microsoft Excel spreadsheet titled "AN004\_1\_02 Working Copy" in the title bar. The ribbon at the top includes tabs for File, Home, Insert, Page Layout, Formulas, Data, Review, and View. The Home tab is selected, displaying various font and alignment tools. The main content of the spreadsheet is a table with the following data:

	A	B	C	D	E
2	AN004_1_02				
3	Document Type Per Key Process	In This File (Y/N)	Generic Name of Document		
4	<b>MVA Fault / Accident Investigation Documents</b>				
5	Automobile Accident Report (IBC form)				
6	Accident Reconstruction Report	Y			
7	Automobile Appraisal Report				
8	Automobile Proof of Loss Report				
9	Automobile Proof of Loss Report (Subrogated Agreement)				
10	Bodily Injury (Victim) Statement /Contact				
11	Bodily Injury Report				
12	Bill of (Automobile Sale)				
13	CSIO Form (Automobile Loss Notice)				
14	Collision Report Form				
15	Collision Statement				
16	Collision Supplement Report				
17	Correspondence on behalf of Ministry of Finance		Subrogation Fee for non-medical portion of emergency services by Alberta Transportation on crown highway		
18	Correspondence between Sec B Insurer and Broker				
19	Correspondence between Insurer and Investigation Services				
20	Correspondence between Insurer and Claimant				
21	Correspondence between Sec B Insurer and Police				
22	Correspondence between Defense Lawyer and Investigation Services				
23	Correspondence between Plaintiff Lawyer and Police				
24	Drivers License (Insured)				
25	Engineering Report				

#### B.4.6. Sample of File Inquiry Display

The screenshot shows a Microsoft Word document titled "Example of File Inquiry Display - Microsoft Word". The document contains the following text:

**File # 004\_02**

Need to figure out the legal / insurance players and who's paying what and why? SEF 44 involved

ICBC involved – is this the at-fault insurer to impaired 3<sup>rd</sup> party driver that hit the van?

It appears that Father of TBI claimant is the insured. Claimant injured in van on a school trip by a TP. Is [Insurer provider 2] the Sec B insurer? If not why not? And if so, why the \$400K portion of the \$1M SEF 44 paid – referred to Insurer Def Law Doc dated Nov 10, 2009 as, “to settle up the risk under the SEF 4, and then not to participate in the trial” p. 1.

It appears, based on a Def Law Doc dated Oct 29, 2009 that [Insurer Provider 2] is the SEF 44 carrier. This makes sense in that insured has an SEF 44 rider that insures him when in a rental car (or other car?). Is then the Sec A No-Fault.

SEF 44 is the “under insured motorist protection endorsement” [for Alberta?].

Spoke with [Internal Key Contact to Insurer Provider 2] re SEF 44: If there is insufficient funds of the liability coverage of other insured (i.e. their coverage is less than insured coverage), then SEF 44 rider of insured kicks in. SEF 44 extends from the liability coverage.

Need a better understanding of “several” liability and “joint” liability. Note on this file that if F driver held to 75% liability, school to 15% and claimant to 10 then it is several liability and not

Page: 1 of 1 | Words: 288 |

#### **B.4.7. Sample of Follow-Up Log Display**

The screenshot shows a Microsoft Word document titled "Follow-up Sec B file on Quality Check Aug 2010 [Compatibility Mode] - Microsoft Word". The document contains a list of follow-ups for Section B claims. The styles ribbon is visible at the top, with "Normal" style selected. The main content is as follows:

**List of Follow-Ups to be Completed for Section B Claims**

**Follow-up on BF008\_1\_02**

1. Complete Reported To column - done
2. Need to code claimant and enter back into Summary file and CoC Doc's file – done (assigned H2)
3. Need to code PHYS who completed form - done
4. Need to code for employer - done
5. Need to complete date for Claimant interim and doctors interim report - done
6. RTW ability designated as totally disabled
7. Add J1 to Coding file and verify if J1 is a duplicate - still need to complete. Take excerpts from Note on File and transpose them into C o C using J1 as general insurance code for insurer O2
8. Determine specialty of PHYS – done (there is no specialty identified)
9. Document Michael C's [X1] company - done
10. Who's W1 and Why a general? - done. This is the PHYS who filled out Interim Doctor's Certificate.

**Follow-up on BN001\_1\_02**

1. Need to complete BN demographic spreadsheet - done
2. Need to review type and date of G & S to determine if possible to itemize separately – will not be itemizing separately unless straightforward
3. Make changes to Coding Players List:
  - a. Verify that correct codes entered for LAWP and ADJB – Done
4. Change FMEM-M-AREP for V4 In C of C spreadsheet. Change already made in Coding List – This code was not used in C of C.

**Follow-up on BN005\_1\_02**

1. Need to verify that CLMT and INSRD – Driver have not provided any information - Done
2. Need to complete cost of G & S by date and type – Not doing this

#### **B.4.8. Sample of General Inquiry Display**

General Notes/Inquiry for [Insurer Provider 2]

Review AAIB

What is "Drop File"? – document added to paper file

Look up was an SEF 44 is. Is this insurance for a rental vehicle?

Review Health Care Cost Recovery Act. Changes in Section 3 in effect April 1, 2009  
[www.health.gov.bc.ca/thirdpartyliability/](http://www.health.gov.bc.ca/thirdpartyliability/).

Indicate in which provincial jurisdiction accident being addressed - this appears to matter

What is “to bring the existence of insurance or an insurance company to the attention of the Court” mean? This caused AMA to assign an in-house lawyer for pleadings, etc.

Look up “World Health Organization Task Force” / Best Evidence Synthesis

Amendment to Sec 626.1 of Insurance Act which came into effect Jan 26, 2004 and changed the way income loss claims are calculated. Now deducts income tax, CPP and EI premiums that would have been payable.

If accident happens on road which is owned by “crown” Alberta Transportation pays for emergency vehicles (all of them including ambulance?). Was asking 02 insurer to reimburse fee for Fire Department \$150.00. There are non-medical and medical coverage in Fire Department. \$150.00 for medical the other \$300.00 non-medical and litr indicates will be seeking reimbursement from liable party.

#### B.4.9. Sample of Insurance File Code Display

AMA Insurance File Code v. 2 - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	P
	Insurance File Name*	Insurance File #*	Stored in Box #	File Status	Section (A or B)	At-Fault or Not at Fault (F, N)	Case ID MVA (001-999)	Person ID (1-9)	Insurance Company (01-99)	Research File # General	Research File # per person	Comments	
2	Insr: Travis Thompson also (ne driver), clmt: Philip Olimba	5528376	1	Closed	Sec A	N	001		102	001_02	AN001_1_02	MVA/Ped so AN and BN are in same file; need to create a notes on File for AN001	
3	Insr: Travis Thompson also (ne driver), clmt: Philip Olimba	5528376	6	Closed	Sec B	N	001		102	001_02	BN001_1_02	Same person as above ( noted by # 2 person ID)	
4	Insr: Kelly Vandergaag, clmt: Josh Bergen	5412376	1	Closed	Sec A	N	002		201	002_02	AN002_1_02	No Fault Benefits through ICBC	
5	Insr: M. Coffin, clmt: C. Wilson	5165947	1	Closed	Sec A	N	003		102	003_02	AN003_1_02		
6	Insr: G. Kostuk, clmt: M. Kostuk	7108784	2	Closed	Sec A	N	004		102	004_02	AN004_1_02	Insurer 02 on for SEF 44 Endorsement coverage; complex coverage issues.	
7	Insr: K. Lundquist, clm: K. Lundquist, Insr Drvr: C. Lamber	4123834	in storage cabinet	Closed	Sec A	N	005		102	005_02	AN005_1_02	Insured was a passenger in her own vehicle driven by F driver and suing F driver - Referred to as a "Passenger Hazard Injury"	
8													

#### **B.4.10. Sample of Potential Key Factors Display**

The screenshot shows a Microsoft Word document window titled "Potential Key Factors [Compatibility Mode] - Microsoft Word". The document content is as follows:

**Potential Key Factors**

Is “negligence” and “effective cause” or “proximate cause” and case law that weighs in on this, common for at-fault claims

In 111 Settlement Offer Exceeded Policy Limit - How relevant are issues of insured? E.g. for 111 insured had max 1 M liability coverage and settlement offer exceeded this. Plaintiff counsel threatening to go after personal assets of insured. Insured saying this is non issue as he has none. And, insurer advised insured get his own counsel.

In no-fault system, the at-fault driver is “put on notice” if the amount of the claim exceeds the amount he/she has for their liability coverage. This letter suggests they get their own lawyer to represent them.

The “limits concern” leads to the insurer trying to negotiate with the TP to settle within those limits. “Limits in jeopardy”.

How common are “advance payments” and for what reason(s). e.g on file #112, \$10K paid in July 2001, but has agreed to pay a total of \$16,750.00 for academic costs to repeat year two of college (time when injury occurred). T/P claimant asked for about \$25k. Insurer referred to it as a 321 advance/school year 2001/2002.

Where should “321 Advances” be itemized.

Liability not an issue for purpose of out of court settlement but if “action” [legal] taken the issue of liability becomes a factor. Goal is to work towards settlement.

Discrepancy in file #111 from what Ambulance call report noted about score of GCS and what insured’s lawyer notes. The latter indicated a TBI (initial of 6). This is not recorded in ambulance call report. Also discrepancy of PHI (in terms of consciousness) of 3 on ambulance call report.

Page: 1 of 4 | Words: 1,156 |

#### **B.4.11. Sample of Settlement Cost Display**

AN004_1_02 Settlement Costs			
Activities	Payees	Amount	Date
Legal Fees		\$ 80,028.52	
Expenses Total		\$ 80,028.52	
Settlement amounts		\$ 400,000.00	as portion of settlement
Adjustment expenses			
Internal adjuster fee			
<b>total is in bold</b>			
Costs		unknown?	
<b>AN004_1_02 Settlement Offers</b>			
30/10/2009 by Mediator (what was left on the table)	High Range	Low Range	
	\$ 2,500,000.00	\$ 3,000,000.00	
<b>By LAWD-COD M13 dated September 23, 2009</b>			
Heads of Damage	Proposed Amount		
General Damages	\$ 150,000.00		
Future Loss of Income	\$ 700,000.00		
Alberta Hospital Claim	\$ 45,885.00		
Father's Loss of Income Claim	\$ 26,400.00		
Valuable Services Claim of Parent	\$ 15,000.00		
Special Damages	\$ 5,000.00		
To be reduced by minimum 25% for Cont. Negligence of not wearing seatbelt	\$ 942,285.00		
<b>June 14, 2006 Itr by LAWD Q19</b>			
Heads of Damage	Low Range	High Range	
Generals	\$ 113,000.00	\$ 135,000.00	
specials	\$ 20,000.00	\$ 20,000.00	
loss of income / future opportunity	\$ 125,000.00	\$ 250,000.00	
cost of future care	\$ 10,000.00	\$ 20,000.00	

#### **B.5. Establishing Inter-Rater Reliability for the Scales: Introduction and Overview**

##### Your Role in the Research

Thank you for agreeing to assist me in my research study. As part of this research you will be scoring two scales: 1) Adversarialness Scale and 2) Responsiveness Scale (described below) for three of the research files. Your involvement will assist the researcher in determining the degree of consensus you and the researcher share for scoring these scales. You have been asked to do this because of your professional expertise in the motor vehicle compensation systems in Canada and your research expertise related to examining Workers' Compensation System files for those who have sustained neuro-trauma (spinal cord) injury following on a work related incident.

##### Description of the Scales

Two scales have been developed as part of this research: 1) Adversarialness Scale; and 2) Responsiveness Scale. Adversarialness and Responsiveness are two of the variables being studied. For research purposes, adversarialness is defined as the degree to which a key player argues / defends a position, which is typically in opposition to an opponent. Responsiveness is defined as the time it takes to respond to a request. The scales will be used to score the degree of adversarialness and responsiveness for each file.

### The Files

Three files have been chosen for the purpose of measuring inter-rater reliability. These files have been chosen because each is:

- Straightforward and hence is easy to understand
- Representative of the two type of systems ( Section A and Section B claims files); and
- Reflects a varying degree of adversarialness and responsiveness.

The research files are:

- AN001\_1\_02;
- BN001\_1\_01; and
- BN005\_1\_01.

These files numbers have been assigned for research purposes to protect claimant and insurance confidentiality.

### Inter-rater Reliability Display (IR Display)

Each of the three files has an IR display. The IR display is a list of documents contained in each claimant's insurance file. For the purpose of determining inter-rater reliability, the IR display has been modified from its original version, Claims Management Process Display by removing extraneous data; leaving only that data which is relevant for scoring the scales. The IR display has been sorted by Date (column D of the spreadsheet). So, the documents, outlined in column A, Document Type are in chronological order according to the date of the first document following the date of loss to the last date of the last document prior to file closure. It provides a chronological order of main events / activities following on a motor vehicle accident for claimants who have sustained a traumatic brain injury. Below is a brief description of the function of each of the categories in the IR display – Table A: Description Inter-rater Reliability Display.

- Document Type
- Who's Talking;
- Requested By / Reported To;

- Date;
- Purpose; and
- Document Excerpt

Table A: Description of Inter-rater Reliability Display

Document Type	Who's Talking	Requested by / Reported To	Date	Purpose	Document Excerpt
The document type is the name / descriptor of a document. For standard forms, the name of the form is used. Example, Notice of Loss & Proof of Claim Form. For general correspondence and for those documents that do not have a standard name, generic names have been used. Example, Correspondence between Insurer and Claimant.	Who's talking is the key player (author) writing the document. The key players are coded according to their profession / role. Example: Plaintiff Lawyer is LAWP*. Please refer to the Key Player Code List for the list of codes of key players, attached as a separate display in each of the files.	The requested by/ reported to, is the key player (recipient) who is receiving the document. These names are also coded. For documents such as "Notes to File" where there is no specific recipient, "FILE" is used. Please refer to the Key Player Code List for the list of codes of key players, attached as a separate display in each of the files.	The date is the date the document was produced. Note, some file documents were undated or were dated incorrectly. For these, the dates have been changed to maintain a chronology of events.	The purpose is the main reason for the document's production.	A document's excerpt is the relevant information contained in each document. It relates to the research variables being studies. The excerpts in "quotes" are those that the author has produced. The excerpts in [square brackets] are those of the researchers; primarily included to explain what is written for clarification, reducing redundancy, comprehensiveness, and/or maintaining anonymity of data (that could reveal personal information of a key player).

\*For research purposes, the key players have been coded. This allows for data analysis and protects the privacy of the key players. The Key Player Code List is included in each file as a separate display (spreadsheet) – Key Player Code List.

It is best to review the IR display for each file and become familiar with the contents of each of the columns (as described above). Once you have a clear understanding of the contents of the IR display then read the instructions for scoring the scales.

### Scoring the Scales

Below is a brief description of the scales and instructions for scoring – Tables C and D: Adversarial Scale and Responsiveness Scale. For ease of reference in accessing the instructions and for scoring both the Adversarialness and Response Scales, it's best to print the Tables for

each file being scored (that is, two scales for each of the three files). Alternatively for scoring purposes, an Adversarialness Scale and a Responsiveness Scale Display have been attached to each of the files (as a separate spreadsheet). The instructions have not been included in these displays.

The Adversarialness Scale has:

- 10 criteria that are assumed to be indicators of adversarialness, based on the research conducted;
- Each criterion has a value based approach that is either objective (the criterion is either yes or no) or a degree of objectiveness (the criteria is yes to a degree or no to a degree, based on your best judgment given your expertise);
- A rationale as to the reason each criterion reflects adversarialness;
- A yes / no potential bias of each criterion has been included to share with the rater a level of error that may be inherent in using that criterion to measure adversarialness;
- Specific steps on scoring each criterion; and
- A column for scoring.

The Responsiveness Scale has:

- No standard set of criterion. Each file must be reviewed to determine what the key player is requesting and if and when the request is provided.

The responsiveness scale has essentially two parts. The first part requires you to select all the “Requests Types” a key player is requesting from another key player (and its corresponding “Date Requested” from the C of C IR display for each file). This will require a careful scanning of Column E: Purpose and Column F: Document Excerpt, for the specific information being requested and provided (and sometimes the date), and then reference to the Date – either found in Column D: Date or the date may be imbedded in Column F: Document Excerpt information. For example, below are two excerpts taken from File #: AN001\_01\_02. Excerpt 1: To Request Information shows that in Column F: Purpose, there is a “To request information”. By reviewing Column F: Document Excerpt, the adjuster (ADJA) is specifically requesting hospital records, health information, employment and schooling records from the Plaintiff Lawyer (LAWP). So, on the Scoring Sheet under “Request Type” you will document “request for information” as per column E: Purpose. In the “Date Request Made”, you will document “17 Aug 09” as per Column D: Date.

#### Excerpt 1: To Request Information

Column A: Document Type	Column B: Who's Talking	Column C: Requested By /	Column D: Date	Column E: Purpose	Column F: Document Excerpt
----------------------------	-------------------------------	--------------------------------	-------------------	----------------------	----------------------------

		<b>Provided To</b>			
Correspondence between Plaintiff Lawyer and Sec A Insurer	ADJA	LAWP	17-Aug-09	To request information	"... I am requesting that you provide the following: Alberta Health & Wellness benefits...ER [notes] and discharge summary...treating rehabilitation hospital [records]...complete copy of Sec B file...Reports of treating physicians...employment information...school information [if any]".

The second part of the responsiveness scale requires that you determine if and when a response was provided. Below is excerpt 2: To Provide Requested Information. Looking at Column E: Purpose, you will see "To provide requested information". It matches up to the "Request Type" you entered as per excerpt 1. Now read Column F: Document Excerpt. It states that ADJA has all the information and that it was provided on August 17, 2009. So, on the Score Sheet you will document "Date Request Provided" as 17 Aug 09.

#### Excerpt 2: To Provide Requested Information

<b>Column A: Document Type</b>	<b>Column B: Who's Talking</b>	<b>Column C: Requested By / Provided To</b>	<b>Column D: Date</b>	<b>Column E: Purpose</b>	<b>Column F: Document Excerpt</b>
Correspondence between Plaintiff Lawyer and Sec A Insurer	ADJA	LAWP	27-Aug-09	To provide requested information	"I have now had the opportunity to review all of the information you provided with your letter of August 17, 2009...it appears [claimant] has recovered quite well...on that basis, we invite you to forward your settlement proposal at your earliest convenience".

However, note that it is the ADJA who is talking and the LAWP is the recipient of the correspondence (not the LAWP providing the information). Don't assume that the information will come from the recipient in the requested entry in all cases. In this case you must have matched the "To request information" and "To provide requested information" (Column E) and read Column F: Document Excerpt for the Date Request Made.

Also note that considering that a Plaintiff Lawyer (LAWP) is managing this file for the claimant, most of the requests will be between the LAWP and the Adjuster, ADJA. On other files, this might not be the case and hence, the information may come from another key player, not necessarily the recipient of the request. So, it's best to review Column E and F to determine the request type, whether the request was provided, and the dates the information was provided. Also, on this file, it happens to be the very next entry in the C of C IR Display. On the other files the response may not appear until several entries later, the responses may come in "bits and pieces", or there may be no response at all.

#### Time It Will Take to Score the Scales

Given your expertise, it will likely take you about 15 minutes to score the Adversarialness Scales for each of the three files. It is recommended that you start with file number AN001\_1\_02 as this is the most straightforward for both the scales. BN005\_1\_01 is the most complex. Note that once you become familiar with the task, the pace will increase. It will likely take you less than 30 minutes to score the Responsiveness Scale for each of the three files. So, the total time it will take to score the two scales by the three files will be approximately 2 ½ hours.

#### Where to Send the Scored Scales

Once you have completed the scoring for these files either fax the printed information to (403) 532-0459 or scan the scales and email them to: ltasker@taskercounselling.com. Alternatively, if you have scored the scales in the Adversarialness Scale and Responsiveness Scale displays (the attached spreadsheet in each of the files) you can email the files to the email address provided. If you have any questions / concerns please call me at (403) 217-5446 (home phone) or (403) 613-1767 (cell phone). Your feedback on the scales is also welcomed.  
Thank you again for your assistance.

#### **B.6. Establishing Inter-Rater Reliability for Adversarialness Scale**

First, Experts 1 and 3 each scored adversarialness of three claims files using the verbal instructions provided by Expert 1. One of the three was a no-fault claims file and the other two were at-fault claims files. Expert 3 was provided with a letter of introduction and overview for scoring responsiveness. Cohen's Kappa ( $\kappa$ ) was used to estimate the inter-item agreement, and Kendall's coefficient of concordance, outlined by Siegel (1956), was used to estimate the rank agreement of overall scores by scoring simple, possible pairs of ranks, and the ratio of the actual total to the maximum total possible. However, poor results were achieved for both the inter item agreement and the overall scores for adversarialness for these three claims files. Based on the feedback provided by Expert 3, it was determined that three of the value-based questions for adversarialness (questions one, four, nine) had been interpreted differently by the two experts. The wording of questions one, four, and nine were then changed to reduce ambiguity.

The two experts then reviewed another set of five new files and each expert scored these separately. Cohen's Kappa and Kendall co-efficient were then calculated (see results below).

The mean for Cohen's Kappa Coefficient was 0.32, which demonstrates a correlation between the two raters in the fair range. However, the Kendall Rank Correlation Coefficient was 0.94, which demonstrates a strong correlation between the two raters.

***B.6.1. Cohen's Kappa Coefficient and Kendall Rank Correlation Coefficient for Adversarialness***

	File A		File B		File C		File D		File E	
	LT	VR								
Total	20	10	10	10	10	10	40	20	50	40
Q1	1	1	0	0	1	1	1	1	1	1
Q2	0	0	0	0	0	0	0	0	0	1
Q3	0	0	0	0	0	0	0	1	1	0
Q4	0	0	0	0	0	0	0	0	0	1
Q5	1	0	0	1	0	0	1	0	0	0
Q6	0	0	1	0	0	0	1	0	1	0
Q7	0	0	0	0	0	0	1	0	0	0
Q8	0	0	0	0	0	0	0	0	0	0
Q9	0	0	0	0	0	0	0	0	1	0
Q10	0	0	0	0	0	0	0	0	1	1
Rank	3	4	4.5	4	4.5	4	2	2	1	1

Cohen's Kappa	File A	File B	File C	File D	File E	Mean	Variance
	0.62	-0.11	1.00	0.09	0.00	0.32	0.22

<b><u>Kendall Rank Correlation Coefficient</u></b>					
File	E	D	A	B	C
LT	1	2	3	4.5	4.5
VR	1	2	4	4	4
Tx	2				
Ty	3				
N	5				
1/2N(N-1)	10				
S	7				
Tau	0.93541				

### ***B.6.2. Criteria Used to Score Adversarialness***

<b>Criteria</b>	<b>Objective or Value-Based<sup>78</sup></b>	<b>Rationale for Inclusion</b>	<b>Score: Yes (Y); No (N)</b>
Were matters settled using lawyers?	Objective-based	Settling disputes with lawyers are typically adversarial	
Was the plaintiff lawyer (LAWP) getting involved in the med / rehab process?	Value-based	LAWP involvement tends to be used to "build a case"	
Did any key player use coercion / threats to compel requested information?	Value-based	Indicates a "power over" position	
Did any key player step outside his/her role / scope of practice?	Value-based	Indicates a "claimant advocacy" position	
Was there an investigation / assessment to verify facts?	Value-based	An Adjuster thoroughly reviews documents and inaccurate information is questioned	
Did any key player use unfriendly / demanding tone?	Value-based	Unfriendly / demanding tone tends to "ruffle feathers"	

<sup>78</sup> Objective-Based questions do not require the rater to subjectively interpret the question. However, value-based questions require the rater to answer the question using his or her opinion or judgement. For example, with the question: Was there a Defence Claim filed?, this simply requires a rater to review the documents to determine if a Defence Claim form was submitted to the court. Hence it is an objective-based question. However, with the question: Did any key player use coercion /threats to compel requested information?, requires the rater to exercise his or her judgement as to what is meant by a 'coercion' or 'threat'. What one rater defines as coercion might be different from the other rater's definition of coercion. Hence it is a value based question.

Was there a Defence Claim filed	Objective-based	By law, a Statement of Claim must be filed within a specified period. However, a Defence Claim need not be filed unless it is felt by LAWP that court involvement is likely	
Were any Court Orders required to compel requested information	Objective-based	Court Orders are used when opposing party is not receiving information after repeatedly asking for it and/or when parties are in dispute of what information should be disclosed	
Is what's being stated in conflict with action	Value-based	When this occurs Adjuster tends to request surveillance or IME to verify a claimant's actions.	
Was there IME / Expert involvement used	Truth-based	From Adjuster's perspective, claimant not progressing as expected / treating HCP opinion on a claimant's function is in conflict with what a claimant is actually doing. Adjuster seeks independent assessment	

### B.6.3. Sample of Instructions for Scoring Adversarialness

Criterion	Rationale for Inclusion	Specific Steps on Scoring	Score: Yes (Y); No (N)
Were matters settled using lawyers?	Lawyers typically take an adversarial position when settling disputes	<ol style="list-style-type: none"> <li>Open the "Claims Management by C of C" display.</li> <li>Refer to column B, "Who's talking" and column C, "Requested By, Reported To".</li> <li>If the key player in any of the rows of column B or column C is a LAWP (Plaintiff Lawyer) and/or a LAWD (Defence Lawyer), then score a "Y" in the last column (to the right) on this Adversarial Scale.</li> <li>If there is no LAWP or LAWD score an "N" in the last column (to the right) on this Adversarial Scale.</li> <li>Move on to "Next Criterion".</li> </ol>	
Was the plaintiff lawyer (LAWP) getting involved in the med / rehab process?	LAWP involvement in the med / rehab process tends to be viewed by Adjusters as "building a case"	<ol style="list-style-type: none"> <li>Open the "Claims Management by C of C" display</li> <li>Refer to column B, "Who's talking" and column C, "Requested By, Reported To".</li> <li>Refer to column F, "Document Excerpt" for <u>each</u> entry that has a LAWP.</li> <li>Read these entries and, using your best judgement, determine if there is any indication that LAWP is involved with the med / rehab process.</li> <li>If, in any of these entries, there is an indication that yes, to a degree, LAWP is involved with the med/rehab process, then score a "Y" in the next column of this Adversarial Scale.</li> <li>If there is no indication, to a degree, that LAWP is involved in the med/rehab process, then score an "N".</li> <li>Move on to "Next Criterion".</li> </ol>	

## B.7. Establishing Inter-Rater Reliability for Responsiveness

Experts 1 and 3 each scored responsiveness of three claims files using the verbal instructions provided by Expert 1. One of the three was a no-fault claims file and the other two were at-fault claims files. Expert 3 was provided with a letter of introduction and overview for scoring responsiveness. A copy of this has been provided within the Appendix X. Expert 3 gave consent to participate.

Each of the experts identified the following information for three claims files used to establish inter-rater reliability.

- The request types<sup>79</sup>;
- The date the request types were made; and
- The date the request types were provided.

The objective for reviewing the sample claims files pertaining to the responsiveness scale was to determine the rate of agreement between the two experts as to the requests types, and the dates that these were requested and the dates to which there had been a response (if at all). Overall, there was 95% agreement for request types, 90% agreement for their request dates, and an 83% agreement for their response dates. When combined, this provided 89% overall agreement for the responsiveness scale. Therefore, the researcher concluded that the responsiveness scale proved effective in measuring the rate of responsiveness. The calculations of the results are appear in the next subsection of appendix B (B.7.1)

#### ***B.7.1. Percentage Agreement for Responsiveness Scoring***

Request Type			Date Request Made			Date Request Provided			
LT	VT	%	LT	VT	%	LT	VT	%	
File 1	21	21	100%	21	20	95%	21	19	90%
File 2	4	4	100%	4	4	100%	4	4	100%
File 3	16	14	88%	16	13	81%	16	11	69%
Total	41	39	95%	41	37	90%	41	34	83%

#### ***B.7.2. Sample of Responsiveness Scale Score Sheet***

##### Responsiveness Scale Score Sheet

---

<sup>79</sup> A request type could be a request for essential information, for example an insurance adjuster requesting claimant's health care records from a plaintiff lawyer, or a request that at particular action be taken, an insurance adjuster asking a defence lawyer to set a trial date to resolve a dispute.

File #: \_\_\_\_\_

<b>Request Type</b>	<b>Date Request Made</b>	<b>Date Request Provided</b>

### B.7.3. Excerpt of Scoring Responsiveness

The screenshot shows a Microsoft Word document titled "Inter-rater Reliability Instructions for Scoring Responsiveness [Compatibility Mode] - Microsoft Word". The document contains the following text:

**Instructions for Scoring the Responsiveness Scale**

**File #:** \_\_\_\_\_

**Steps on Scoring Responsiveness:**

**Part One**

In part one of this scoring you will be identifying all the entries in column E, "Purpose" of the IR display that are "requesting" information and entering the request type in the first column (Request Type) of the Responsiveness Scale, found on the 3 (last page of this document). A request will be in the form of "To request..." and could be "To request information; To request a form completion; To request payment, etc".

You will then be entering the corresponding "Date" of each "To request..." type in the second column (Date Request Made) of the Responsiveness Scale, found on page 3. All the entries are in chronological order of date.

**Scoring part one:**

1. Open the "IR display" spreadsheet.
2. Refer to column E, "Purpose" and read each entry in the rows of column E to determine if there is a "To request..." type.
3. Enter the Request Type and its corresponding date in the Table on page 3.
4. Repeat these steps until all the "To request..." types and their dates are found and entered in the Table.

**Part Two**

In part two of this scoring you will be identifying if there is a "To provide requested..." for each

Page: 1 of 4 | Words: 501 |

## B.8. Documents Contained in Claims Files

### B.8.1. Documents for Accident/Fault Investigation Phase

Accident/Fault Investigation Phase	
Generic Document Title	Specific Document Title
Automobile Accident Forms/Report	<ul style="list-style-type: none"> <li>• Collision Report Form/Crash Report (USA)</li> <li>• Police Continuation/Supplemental Report</li> </ul>
Accident Reconstruction Report	<ul style="list-style-type: none"> <li>• Police/Police Analyst Accident Reconstruction Report</li> <li>• MV Engineering / MC Mechanical Report</li> <li>• Photographs (of vehicles, scene of accident, etc.); black &amp; white, colour, original, photocopies</li> </ul>
Witness Statements	<ul style="list-style-type: none"> <li>• Collision/Witness Statements - Independent Witness</li> <li>• Collision /Witness Statements - Insured Driver</li> <li>• Collision/Witness Statements – Claimant</li> <li>• Collision/Witness Statements - Others Involved in Accident</li> </ul>
Insurance Cover	<ul style="list-style-type: none"> <li>• Application for/Certificate of Automobile Insurance (Insured Driver)</li> </ul>

	<ul style="list-style-type: none"> <li>• Vehicle Insurance Report</li> </ul>
Property Damage Forms/Reports	<ul style="list-style-type: none"> <li>• Automobile Proof of Loss Notice/Report (to include CSIO insurance industry forms and Subrogated Agreements)</li> <li>• Bill of (Automobile Sale)</li> <li>• Automobile Appraisal Report</li> <li>• Property Damage Release Form</li> <li>• Total Loss Report</li> <li>• Total Loss &amp; Salvage Checklist</li> <li>• Settlement/Cheque Requisition Form</li> <li>• Subrogation Demand Notice</li> <li>• Towing/Salvage</li> </ul>
Bodily Injury Forms/Reports	<ul style="list-style-type: none"> <li>• Bodily Injury (Victim) Statement /Contact</li> <li>• Bodily Injury Report / Injury Caption Summary</li> <li>• Bodily Injury Report (informal report by Broker)</li> <li>• Bodily Injury Report</li> <li>• Newspaper Articles /Media Releases</li> </ul>
Judicial Matters	<ul style="list-style-type: none"> <li>• Trial Reports/Proceedings</li> <li>• Driving Violations</li> <li>• Search Report/Case Law – Judicial</li> <li>• Mental Health Act Warrant of Insured Driver</li> <li>• Toxicology Report of Insured Driver</li> </ul>
Title Ship	<ul style="list-style-type: none"> <li>• Driver's License (Insured)</li> <li>• Certificate of Title/Purchase Contract (Vehicle)</li> <li>• Search Report - Personal Property</li> </ul>
Correspondence between Key Players	<ul style="list-style-type: none"> <li>• E.g. letter written by Insurance Adjuster to Defence Lawyer</li> </ul>

#### ***B.8.2. Documents for Medical/Rehabilitation Phase***

Medical/Rehabilitation Phase	
Generic Document Title	Specific Document Title
Pre-Accident Records (i.e. those documents that pre-dated the date of loss of the motor vehicle accident in question)	<ul style="list-style-type: none"> <li>• Health Records</li> <li>• Academic/Employment Records</li> <li>• Judicial Records (example a criminal conviction);</li> </ul>
Early Intervention Records (related to the motor vehicle accident in question)	<ul style="list-style-type: none"> <li>• Ambulance, Fire Reports</li> <li>• Emergence Department notes and records</li> </ul>
Hospital-based In-patient Records (related to the motor vehicle accident in question)	<ul style="list-style-type: none"> <li>• All records produced by the hospital as part of a claimant's in-patient stay in ICU, ward care, rehabilitation, etc. These include admission/discharge reports, surgical reports, therapy reports, nursing notes, physician notes, neuro-vital signs reports, neurological notes and records, etc.</li> </ul>
Community-based Records (related to the motor vehicle accident in question)	<ul style="list-style-type: none"> <li>• Health Records. For example, treatment reports/notes, family physician records, hospital follow- ups (as an outpatient), dental records/reports, etc.</li> </ul>

	<ul style="list-style-type: none"> <li>• Academic/Employment Records. Examples include employment records of the employment at the date of loss, academic records at the date of loss, or for those requesting a return to school, IPP programs for children return to school, academic/education assessment, employability assessments, employment benefits, and post-accident Tax returns etc.</li> </ul>
Correspondence between key players	<ul style="list-style-type: none"> <li>• Example, letter written Plaintiff Lawyer to Family Physician</li> </ul>

#### ***B.8.3. Documents for Claims Administration (Section B; No-Fault) Phase***

<b>Claims Administration (Section B; No-Fault) Phase</b>	
<b>Generic Document Title</b>	<b>Specific Document Title</b>
Payment Records/Worksheets (i.e. documents related to payments of benefits, services, etc., that an insurer would payout on a Section B claim)	<ul style="list-style-type: none"> <li>• Accident Benefit/Medical Payments Record Sheet (including AAIB treatment payments)</li> <li>• Income Replace Benefits Worksheets</li> <li>• Statements of Account</li> </ul>
Insurance claims forms (accident benefits related)	<ul style="list-style-type: none"> <li>• For Section B claims, these include all standard forms used by an accident benefits insurer such as Notice of Proof of Loss Reports, Claim for Disability Benefits, etc. and to include consent to disclose medical and employment information</li> </ul>
Claim Information Data Recording Sheets	<ul style="list-style-type: none"> <li>• These include checklists, policy records sheets, open/closing claims sheets, file transfer sheets, statistics, notes on file, etc.</li> </ul>
Independent Medical Examination (IME)/Insurance Rehabilitation Records	<ul style="list-style-type: none"> <li>• These include any report used to clarify a claimants' impairment, disability, etc. It also includes research article on a disease/condition, resumes of health care professionals or claimant/family witness statements about a claimant's character, functioning, etc.</li> </ul>
Agreements/Contracts	<ul style="list-style-type: none"> <li>• These include any documentation that the insurer has requested by a key player that is unique to his or her claim or to a particular insurer. Examples include treatment facility agreements for services or "special circumstances" agreements between a claimant and insurer.</li> </ul>
Surveillance Reports	<ul style="list-style-type: none"> <li>• These include reports and searches conducted by external or internal surveillance services and used to gather claimant information such as demographics, community/work life, finances (loans, bankruptcy), etc.</li> </ul>
Correspondence between players	<ul style="list-style-type: none"> <li>• Example, letter written by insurance adjuster to Claimant</li> </ul>

#### ***B.8.4. Documents for Claims Administration (Section A; At-Fault) Phase***

<b>Claims Administration (Section A; At-Fault) Phase</b>	
<b>Generic Document Title</b>	<b>Specific Document Title</b>
Payment Records/Worksheets (i.e. documents related to payments of benefits,	<ul style="list-style-type: none"> <li>• 321 Advance Payment</li> <li>• Acknowledgement of Advance Payment</li> <li>• Cheque Authorizations</li> </ul>

services, etc., that an Insurer would pay out on a Section A claim)	<ul style="list-style-type: none"> <li>General Damages/Settlement Payments Worksheets</li> <li>Calculation of Net Income Sheet</li> <li>Statements of Account</li> </ul>
Insurance claims forms (liability related)	<ul style="list-style-type: none"> <li>For Section A claims, these include all standard forms used related to the liability portion of the claim. Examples include, Final Release of all Claims Form, Litigation Request Form, Authorization to Release information, etc.</li> </ul>
Claim Information Data Recording Sheets	<ul style="list-style-type: none"> <li>These include forms, reports, etc. similar to the Section B recording sheets but specific managing, for example, a large loss liability claim and/or bodily injury claim.</li> </ul>
Independent Medical Examination (IME)/Insurance Rehabilitation Records	<ul style="list-style-type: none"> <li>Similar to Section B</li> </ul>
Agreements/Contracts	<ul style="list-style-type: none"> <li>Similar to Section B</li> </ul>
Surveillance Reports	<ul style="list-style-type: none"> <li>Similar to Section B</li> </ul>
Correspondence between players	<ul style="list-style-type: none"> <li>Example, as per Section B</li> </ul>

#### ***B.8.5. Documents for Dispute Resolution Phase***

<b>Dispute Resolution Phase</b>	
<b>Generic Document Title</b>	<b>Specific Document Title</b>
Pleading Phase	<ul style="list-style-type: none"> <li>Statements of Claim/Defence, on all claimants</li> <li>Notices e.g. Notice to Subrogate</li> </ul>
Document Gathering Phase	<ul style="list-style-type: none"> <li>Curriculum Vitae of Experts/Nominee of Plaintiff</li> <li>Search Reports related to evidence such as a registered company, statement of claim, judicial/court search,</li> <li>Referenced sections of Insurance Act /US Insurance Act</li> <li>Expert Reports such as economic assessment, future cost of care, independent medical assessment</li> <li>Case Law</li> <li>Surveillance Reports/Summaries</li> <li>Witness Statements</li> <li>Lawyer notes/memorandums</li> </ul>
Alternative Dispute Resolution (ADR) /Mediation Phase	<ul style="list-style-type: none"> <li>Mediation Briefs/Summaries</li> </ul>
Examination for Discovery Phase	<ul style="list-style-type: none"> <li>Examination for Discovery Transcripts/Summaries</li> <li>Undertakings/Responses (following on Examinations of Discovery)</li> <li>Demands/ Notices</li> </ul>
Preparation for Trial (Judicial Dispute Resolution (JDR), Pre-trial, and Trial Phase)	<ul style="list-style-type: none"> <li>Affidavits</li> <li>Appointments</li> <li>List of Documents</li> <li>Briefs</li> <li>Orders</li> <li>Notices</li> <li>Opinions/Judgments</li> </ul>

	<ul style="list-style-type: none"> <li>• Reason for Judgments</li> <li>• Writs</li> </ul>
Appeal Phase	<ul style="list-style-type: none"> <li>• Legal Assessments</li> <li>• Rebuttals/ Submissions</li> <li>• List of Authorities</li> <li>• Factums</li> <li>• Notice of Appeal</li> <li>• Reply Briefs</li> <li>• Final Judgment</li> </ul>
Settlement Phase	<ul style="list-style-type: none"> <li>• Bill of Costs</li> <li>• Calculation of Judgment</li> <li>• Declarations</li> <li>• Discontinuance of Proceedings</li> <li>• Expenses Summary Report</li> <li>• Partial Satisfaction Piece</li> <li>• Memorandums</li> <li>• Notices</li> <li>• Orders</li> <li>• Settlement Report</li> <li>• Structured Settlement Report</li> </ul>
Guardianship, Powers of Attorney, etc.	<ul style="list-style-type: none"> <li>• Appointments for Power of Attorney, Guardianship, Substitute Decision Maker, Trustee</li> <li>• Certificates</li> <li>• Affidavits</li> <li>• Applications</li> <li>• Orders</li> <li>• Consents</li> </ul>
Correspondence between players	<ul style="list-style-type: none"> <li>• Example, letter written by Defence Lawyer to Plaintiff Lawyer</li> </ul>

## B.9. Claimant Demographics by Claim Type and Injury Severity

### B.9.1. Gender by Claim Type

Claim Type	N	Female	Male
No-Fault	22	9 (40.9%)	13 (59.1%)
At-Fault	35	12 (34.3%)	23 (65.7%)

#### **B.9.2. Gender by Injury Severity**

Injury Severity	N	Female	Male
Mild	24	8 (33.3%)	16 (66.7%)
Moderate/Severe	33	13 (39.4%)	20 (60.6%)

#### **B.9.3. Average Age by Claim Type**

Claim Type	N	Mean	Std. Deviation
No-Fault	22	32.77	19.41
At-Fault	35	31.49	18.71

#### **B.9.4. Average Age by Injury Severity**

Injury Severity	N	Mean	Std. Deviation
Mild	24	39.21	20.47
Moderate/Severe	33	26.73	15.84

#### **B.9.5. Educational Level by Claim Type**

Claim Type	N	Less than High School	High School, GED, Certificate	College Diploma, University Degree	Not Documented
No-Fault	22	9 (40.9%)	3 (13.6%)	4 (18.2%)	6 (27.3%)
At-Fault	35	13 (37.1%)	13 (37.1%)	9 (25.7%)	0 (0%)

### **B.9.6. Educational Level by Injury Severity**

Injury Severity	N	Less than High School	High School, GED, Certificate	College Diploma, University Degree	Not Documented
Mild	24	6 (25.0%)	8 (33.3%)	5 (20.8%)	5 (20.8%)
Moderate/Severe	33	16 (48.5%)	8 (24.2%)	8 (24.2%)	1 (3.0%)

### **B.9.7. Average Income by Claim Type**

Claim Type	N	Mean	Std. Deviation
No-Fault	22	\$16,761	\$18,590
At-Fault	35	\$14,808	\$16,344

### **B.9.8. Average Income by Injury Severity**

Injury Severity	N	Mean	Std. Deviation
Mild	24	\$19,625	\$17,708
Moderate/Severe	33	\$12,606	\$16,294

## **B.10. Observed Scores for the Dependent Variables**

### **B.10.1. Observed Scores for Adversarialness**

Grouping of Claims Files	Sample Size (N)	Mean	Median	Standard Deviation	Variance	Skewness	Kurtosis
All	57	37.54	40	22.54	508.15	-0.15	-0.51
At-Fault	35	45.43	50	19.61	384.37	-0.08	0.19
No-Fault	22	25.00	30	21.55	464.29	0.06	-1.60
Mild TBI	24	39.58	50	22.93	525.91	-0.59	-0.42
Mod./Severe TBI	33	36.06	30	22.49	505.87	0.159	-0.24

#### ***B.10.2. Observed Scores for Cost***

Grouping of Claims Files	Sample Size (N)	Mean	Median	Standard Deviation	Variance	Skewness	Kurtosis
All	57	.33	.1	.43	.19	1.73	3.45
At-Fault	35	.37	.20	.44	.19	2.05	5.54
No-Fault	22	.25	.02	.42	.18	1.36	-0.12
Mild TBI	24	.37	.05	.12	.02	1.65	1.8
Mod./Severe TBI	33	.50	.4	.50	.25	1.05	1.31

#### ***B.10.3. Observed Scores for Responsiveness***

Grouping of Claims Files	Sample Size (N)	Mean	Median	Standard Deviation	Variance	Skewness	Kurtosis
All	57	120.37	94	116.06	13470.73	1.16	.40
At-Fault	35	121.03	80	122.40	14982.68	1.09	-0.17
No-Fault	22	25	30	21.55	464.29	.06	1.6
Mild TBI	24	114.29	97.5	102.59	10524.56	1.29	1.29
Mod./Severe TBI	33	124.79	76	126.34	15961.49	491.10	.05

#### ***B.10.4. Observed Scores for Recovery***

Grouping of Claims Files	Sample Size (N)	Mean	Median	Standard Deviation	Variance	Skewness	Kurtosis
All	57	373.70	264.00	286.85	82284.97	0.18	-1.74
At-Fault	35	345.09	219.00	274.93	75583.26	0.35	-1.59
No-Fault	22	419.23	426.00	305.81	93517.61	-.01	-1.97
Mild TBI	24	231.17	157.50	218.04	47542.93	1.14	.32
Mod./Severe TBI	33	477.36	632.00	288.98	83508.43	-0.49	-1.66

## APPENDIX C: ENTER METHOD REGRESSION ANALYSIS

### C.1. Enter Method Regression Results for AF Phase

#### *C.1.1. Set of Tables 4-5b: Key Players and Adversarialness in AF Phase*

Enter Method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.541	.292	.252	19.494	.292

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	8315	3	2771.6	7.293	.0004
	Unexplained (Residual)	20141	53	380.0		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	27.65	4.24		6.529	2.6E-8
	Engineer	1.17	10.12	.024	.116	.908
	Defence Lawyer	24.05	10.61	.474	2.266	.028
	Witnesses	5.23	5.58	.114	.936	.353

#### *C.1.2. Set of Tables 4-5c: Key Players and Cost in AF Phase*

Enter Method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.394	.155	.107	.410	.155

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	1.63	3	.544	3.241	.029
	Unexplained (Residual)	8.89	53	.168		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	.272	.089		3.058	.003
	Engineer	.025	.213	.026	.117	.907
	Defence Lawyer	.381	.223	.391	1.709	.093
	Witnesses	-.084	.117	-.095	-.718	.476

## C.2. Enter Method Regression Results for CA Phase

### C.2.1. Set of Tables 4-12a: Key Players and Adversarialness in CA Phase

Enter Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.764	.584	.534	15.383	.584

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	16624	6	2770.7	11.7	.00000004
	Unexplained (Residual)	11832	50	236.6		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	7.02	5.85		1.200	.236
	Claimant	-1.33	4.83	-.030	-.275	.784
	Insured Driver	9.32	5.47	.199	1.703	.095
	Plaintiff Lawyer	25.82	6.10	.440	4.234	.000
	Defence Lawyer	8.44	5.41	.184	1.562	.125
	Independent Medical Examiner	-1.93	4.72	-.041	-.409	.684
	Surveillance	12.99	4.77	.270	2.724	.009

### C.2.2. Set of Tables 4-12b: Key Players and Cost in CA Phase

Enter Method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.474	.224	.131	.404	.224

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	2.36	6	.394	2.412	.040
	Unexplained (Residual)	8.16	50	.163		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	.450	.154		2.929	.005
	Claimant	-.239	.127	-.277	-1.884	.065
	Insured Driver	-.117	.144	-.130	-.812	.421
	Plaintiff Lawyer	-.078	.160	-.069	-.485	.630
	Defence Lawyer	.314	.142	.356	2.212	.032
	Independent Medical Examiner	-.063	.124	-.070	-.507	.614
	Surveillance	.044	.125	.048	.355	.724

### C.3. Enter Method Regression Result for TBI as a Consideration

#### C.3.1. Set of Tables 4-16a: Type of Care and Cost

Enter Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.653	.426	.302	.362	.426

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	4.49	10	.449	3.42	.002

	Unexplained (Residual)	6.04	46	.131		
--	------------------------	------	----	------	--	--

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	-.026	.209		-.125	.901
	Ambulance	.126	.221	.075	.571	.570
	Emergency care facility	-.005	.187	-.004	-.029	.977
	Neuro/TBI Rehab (hospital-based inpatient care)	.185	.150	.170	1.234	.223
	Radiological evidence of skull/brain injury	.066	.151	.076	.439	.663
	Neuro/TBI Rehab outpatient care (follow-up/assessment)	.169	.145	.165	1.169	.249
	Community-based Specialized/Academic care	.433	.178	.309	2.437	.019
	Long term care	-.049	.206	-.032	-.237	.813
	Hospital LOS	.001	.001	.242	1.697	.097
	ICU Observation (uni-disciplinary inpatient care)	-.122	.214	-.073	-.571	.571
	ICU Multidisciplinary inpatient care	.065	.169	.075	.388	.700

### ***C.3.2. Set of Tables 4-16b: Primary Diagnosis and Cost***

Enter Method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.526	.276	.221	.383	.276

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	2.91	4	.727	4.966	.002
	Unexplained (Residual)	7.62	52	.146		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	.150	.108		1.387	.171
	Hospital-based primary	.229	.129	.265	1.773	.082

	diagnosis of TBI				
	Hospital-based primary diagnosis of another injury	.099	.174	.071	.570
	Community-based primary diagnosis of TBI	.221	.133	.248	1.654
	Community-based primary diagnosis of another injury	-.128	.136	-.136	-.945

### C.3.3. Set of Tables 4-17a: Type of Care and Recovery

Enter Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.727	.528	.426	217.385	.528

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	2434169	10	243417	5.15	.00005
	Unexplained (Residual)	2173788	46	47256		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	130.2	125.2		1.040	.304
	Ambulance	315.0	132.5	.283	2.377	.022
	Emergency care facility	-267.3	112.0	-.289	-2.387	.021
	Neuro/TBI Rehab (hospital-based inpatient care)	69.8	89.9	.097	.777	.441
	Radiological evidence of skull/brain injury	234.2	90.8	.407	2.580	.013
	Neuro/TBI Rehab outpatient care (follow-up/assessment)	60.4	87.0	.089	.695	.491
	Community-based Specialized/Academic care	-266.7	106.6	-.288	-2.501	.016
	Long term care	174.6	123.8	.174	1.410	.165
	Hospital Length of Stay (LOS)	.901	.439	.265	2.054	.046
	ICU Observation (uni-disciplinary inpatient care)	73.3	128.6	.066	.570	.571
	ICU Multidisciplinary inpatient care	-13.5	101.1	-.023	-.134	.894

**C.3.4. Set of Tables 4-17b: Primary Diagnosis and Recovery**

Enter Method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	.511	.261	.204	255.904	.261

Model		Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p-Value
1	Explained (Regression)	1202654	4	300663	4.59	.003
	Unexplained (Residual)	3405304	52	65487		

Model		Coefficient (B)	Std. Error	Beta	t-Value	p-Value
1	(Constant)	195.5	72.4		2.70	.009
	Hospital-based primary diagnosis of TBI	105.6	86.4	.185	1.22	.227
	Hospital-based primary diagnosis of another injury	239.4	116.5	.258	2.06	.045
	Community-based primary diagnosis of TBI	231.4	89.1	.393	2.60	.012
	Community-based primary diagnosis of another injury	34.6	90.7	.056	.381	.704