

Ontario Psychological Association Guidelines for Assessment and Treatment in Auto Insurance Claims

July 29, 2010

OPA Auto Task Force

Acknowledgments

This document is the final product of several years of work, most of which necessarily occurred at a rather fast pace after requirements for implementation of the new Statutory Accident Benefits Schedule were finalized and announced by the Financial Services Commission of Ontario, just months before the determined deadline for implementation of September 1, 2010. As a result of the sheer number of regulatory changes affecting practice to be considered and the tight timelines involved, many people gave up several hours of their time to work at an intense pace in order to produce this document. The OPA would like to thank the following contributors and peer reviewers:

Amber G. Smith, Ph.D., C.Psych.
Antonina Omisade, Ph.D., C.Psych.
Brian Levitt, Ph.D., C.Psych.
Diana Velikonja, Ph.D., C.Psych.
Faith K. Kaplan, Ph.D., C.Psych.
J. Douglas Salmon, Ph.D., C.Psych.
Jane Storrie, Ph.D., C.Psych.
John W. Schneider, Ph.D., C.Psych.
Ken Reesor, Ph.D., C.Psych.
Lorie Saxby, Ph.D., C.Psych.
Rhonda Nemeth, Ph.D., C.Psych.
Ronald Kaplan, Ph.D., C.Psych.

Anna Pignol, Ph.D., C.Psych.
Brian Bigelow, Ph.D., C.Psych.
Debra Cowman, Ph.D., C.Psych.
Elaine McKinnon, Ph.D., C.Psych.
Ivan Kiss, Ph.D., C.Psych.
Jack Ferrari, Ph.D., C.Psych.
Jeremy B. Frank, Ph.D., C.Psych.
John VanDeursen, Ph.D., C.Psych.
Lester Krames, Ph.D., C.Psych.
Margaret Weiser, Ph.D., C.Psych.
Robert Schnurr, Ph.D., C.Psych.
Tony Iezzi, Ph.D., C.Psych.

Special thanks to Ms. Elaine Ford and Ms. Caitlin Aruffo for administrative support, and to Mr. Chris Aruffo for editing advice.

OPA President, Dr. Margaret Weiser and Executive Director, Dr. Ruth Berman were especially supportive of these Guidelines; they, together with the OPA Board of Directors and administrative support staff were instrumental throughout the process in ensuring review and publication of these documents.

We must highlight the irreplaceable involvement of Dr. Ruth Berman for making each of the previous versions of this document stronger, and for being involved in every negotiation with the Auto Task Force over many years, ensuring that the needs of the profession and our patients were always front of mind and presented with passion.

TABLE OF CONTENTS

| | |
|---|-----------|
| INTRODUCTION | 6 |
| PURPOSE OF THE GUIDELINE..... | 6 |
| METHOD OF DEVELOPMENT | 6 |
| DESCRIPTION OF THE HANDBOOK AND GUIDELINES..... | 7 |
| ORGANIZATION..... | 7 |
| APPLICATION AND LIMITATIONS OF THE HANDBOOK AND GUIDELINES | 8 |
| CAUTION AND RECOMMENDATIONS..... | 8 |
| GENERAL PRINCIPLES | 9 |
| CURRENT STANDARDS AND ETHICAL PRACTICES | 10 |
| THE PRACTICE CONTEXT OF ASSESSMENT AND TREATMENT IN AUTO INSURANCE CLAIMS | 10 |
| THE SCOPE OF THE PROBLEM: PREVALENCE AND COST OF MENTAL ILLNESS AND DISABILITY..... | 10 |
| <i>Prevalence and Description of Psychological Injuries and Impairment</i> | 10 |
| <i>Psychological Injuries and Disability after Motor Vehicle Accidents</i> | 11 |
| Frequency of Accidents and Injury following MVAs | 11 |
| Frequency of Psychological Injury and Impairment following an MVA | 11 |
| Persistent Pain..... | 12 |
| Persistent Pain - Prevalence | 12 |
| Persistent Pain - Comorbidity | 12 |
| Persistent Pain and Polytrauma– Natural Course | 13 |
| Post-Traumatic Stress | 13 |
| Post-Traumatic Stress - Prevalence..... | 13 |
| Post-traumatic Stress - Comorbidity..... | 14 |
| MVA-Related Post-Traumatic Stress - Impairment..... | 15 |
| Natural Course of Post-Traumatic Stress: Acute Stress Disorder, PTSD, and Natural Remission..... | 15 |
| Natural Course of Post-Traumatic Stress – Prevalence of Acute Stress Disorder (ASD) | 15 |
| Natural course of post-traumatic stress – Progression, Remission, and Recovery | 16 |
| Natural Course of Post-Traumatic Stress – Progression, Remission, and Recovery | 17 |
| Depression..... | 17 |
| Depression – Prevalence and Post-traumatic Progression | 17 |
| Traumatic Brain Injury (TBI) | 18 |
| Traumatic Brain Injury (TBI) - Prevalence..... | 18 |
| Traumatic Brain Injury (TBI) – Impairment and Service Needs | 18 |
| Traumatic Brain Injury (TBI) – Mild TBI..... | 18 |
| TBI and post-traumatic stress | 20 |
| Other Impairments and Disorders..... | 20 |
| Cognitive Impairment without Brain Injury | 20 |
| Severe physical impairments/disorders..... | 21 |
| Other impairments/disorders and comorbidity | 21 |
| Children and Adolescents | 21 |
| Children and adolescents - TBI..... | 21 |
| Children and adolescents - PTSD | 22 |
| Children and adolescents – Effects of Injured Family Members..... | 23 |
| Litigation Stress | 23 |
| <i>Cost of psychological impairments</i> | 23 |
| Cost of psychological impairments - Depression | 24 |
| Cost of psychological impairments - PTSD..... | 24 |
| Cost of psychological impairments – MVA-specific..... | 24 |
| <i>Efficacy and cost-effectiveness of psychological intervention</i> | 25 |
| Efficacy and cost-effectiveness of psychological intervention – Problems of Current Spending..... | 25 |
| Efficacy and cost-effectiveness of psychological intervention – Pharmacotherapy vs Psychological Treatment | 25 |
| Efficacy and cost-effectiveness of psychological intervention – Cost-offsets of Psychological Intervention..... | 26 |
| Efficacy and cost-effectiveness of psychological intervention – Cost-offsets in Canada | 26 |
| Efficacy and cost-effectiveness of psychological intervention – PTSD and Pain | 27 |

| | |
|--|-----------|
| ONTARIO REGULATION 34/10: THE NEW SABS..... | 27 |
| BACKGROUND..... | 27 |
| ONTARIO REGULATION 34/10: HIGHLIGHTS FOR PSYCHOLOGISTS PROVIDING AND REVIEWING CLINICAL ASSESSMENT AND TREATMENT | 28 |
| BENEFIT LEVELS:..... | 28 |
| MINOR INJURY DEFINITION..... | 28 |
| MINOR INJURY BENEFITS..... | 29 |
| MINOR INJURY GUIDELINE (MIG)..... | 29 |
| <i>Psychological impairments are not classified as “minor injuries”</i> | 29 |
| <i>Description of the MIG</i> | 29 |
| <i>Psychological Interventions in the MIG</i> | 30 |
| Supplementary goods and services during the treatment phase..... | 30 |
| <i>Anxiety Disorders and Brain Injury are not “Sequelae of Minor Injuries”</i> | 30 |
| <i>Mood and Chronic Pain Disorders are not “Minor Injuries”</i> | 31 |
| APPLICATION AND INSURER REVIEW OF ASSESSMENT AND TREATMENT PLANS..... | 31 |
| IMPLICATIONS FOR PRACTICE OF BOTH TREATING PRACTITIONERS AND IE REVIEWERS | 32 |
| CLAIMING BENEFITS..... | 33 |
| CLAIMING BENEFITS FOR FAMILY MEMBERS..... | 33 |
| PAYMENT FOR ASSESSMENT AND TREATMENT UNDER THE SABS | 33 |
| ASSESSMENTS AND EXAMINATIONS UNDER THE SABS..... | 34 |
| “ASSESSMENTS” AND “EXAMINATIONS”..... | 34 |
| MODEL OF ASSESSMENTS AND EXAMINATIONS (TESTING)..... | 34 |
| PSYCHOLOGICAL PRE-ASSESSMENT GUIDELINE..... | 37 |
| INDICATORS TO COMPLETE AN INTAKE SCREENING TO PROPOSE A PSYCHOLOGICAL ASSESSMENT..... | 37 |
| BRIEF CLINICAL INTERVIEW/INTAKE SCREENING FOR PROPOSING PSYCHOLOGICAL ASSESSMENTS..... | 37 |
| FEE FOR COMPLETION OF THE OCF-18..... | 38 |
| INDICATORS FOR CLINICAL/HEALTH/REHABILITATION PSYCHOLOGICAL ASSESSMENTS..... | 38 |
| INDICATORS FOR SPECIFIC SPECIALIZED PSYCHOLOGICAL ASSESSMENTS..... | 38 |
| INDICATORS FOR PSYCHOVOCATIONAL ASSESSMENTS..... | 39 |
| INDICATORS FOR PSYCHOEDUCATIONAL ASSESSMENTS..... | 39 |
| INDICATORS FOR NEUROPSYCHOLOGICAL ASSESSMENTS..... | 40 |
| INDICATORS FOR COMBINATION SPECIALIZED ASSESSMENTS..... | 42 |
| OCF-18 APPLICATION FOR APPROVAL OF ASSESSMENT STEPS..... | 42 |
| <i>Components of the OCF-18 to apply for approval of assessments/examinations</i> | 43 |
| <i>Multiple Assessments/Examinations</i> | 44 |
| PSYCHOLOGICAL ASSESSMENT GUIDELINES | 45 |
| BRIEF REVIEW OF LITERATURE AND IMPLICATIONS FOR PSYCHOLOGICAL ASSESSMENT/EXAMINATION..... | 45 |
| <i>Feedback as an Essential Component of Assessment</i> | 46 |
| ASSESSMENT INTERVENTIONS..... | 47 |
| <i>Assessment Considerations</i> | 48 |
| Clinical/Health/Rehabilitation Assessment..... | 49 |
| Special concerns in assessment of depression..... | 49 |
| Special concerns in assessment of post-traumatic stress..... | 49 |
| Special considerations in assessment of interacting physical and psychological injuries | 50 |
| Special consideration when completing clinical/health/rehabilitation assessments of children and adolescents | 50 |
| REQUIREMENTS FOR SPECIFIC SPECIALIZED ASSESSMENTS AND EXAMINATIONS (TESTING) - (NEUROPSYCHOLOGICAL, PSYCHOVOCATIONAL, PSYCHOEDUCATIONAL ASSESSMENTS AND EXAMINATIONS (TESTING))..... | 54 |
| <i>Components of Neuropsychological (and other) Specific, Specialized Assessments and Examinations</i> | 54 |
| <i>Specific Concerns when Assessing MVA Impairments</i> | 56 |
| <i>Specific Concerns when Assessing Mild TBI in Adults</i> | 56 |

| | |
|--|-----------|
| <i>Specific Concerns when Assessing Polytrauma</i> | 57 |
| TIME REQUIRED FOR NEUROPSYCHOLOGICAL, PSYCHOVOCATIONAL, AND PSYCHOEDUCATIONAL ASSESSMENTS | 57 |
| <i>Indicators for a Neuropsychological Assessment/Examination</i> | 58 |
| PSYCHOVOCATIONAL AND PSYCHOEDUCATIONAL ASSESSMENT | 61 |
| <i>Indicators for a Psychovocational Assessment/Examination</i> | 61 |
| <i>Indicators for a Psychoeducational Assessment/Examination</i> | 61 |
| REBUTTAL OF DENIED ASSESSMENT/TREATMENT PROPOSALS | 66 |
| PSYCHOLOGICAL TREATMENT PLANS | 66 |
| INDICATORS TO PROPOSE PSYCHOLOGICAL TREATMENT | 66 |
| OCF-18 TREATMENT PLAN APPLICATION..... | 66 |
| <i>Treatment Plan Application Approval, Review, and Initiation of Treatment</i> | 66 |
| <i>Treatment Interventions</i> | 66 |
| <i>Pain Treatment Literature</i> | 67 |
| <i>Depression Treatment Literature</i> | 68 |
| <i>Identification and treatment of Acute Stress Disorder – Prevention of PTSD</i> | 70 |
| <i>Treatment of PTSD</i> | 70 |
| <i>Special considerations in planning treatment for post-traumatic stress</i> | 72 |
| TREATMENT GUIDELINES | 75 |
| TREATMENT INTERVENTIONS..... | 79 |
| <i>Review of External File Information as Received</i> | 79 |
| <i>Consultation, Collaboration, and Communication</i> | 79 |
| <i>Ongoing Evaluation, Formal re-Assessment, and Modification of Treatment</i> | 80 |
| <i>Preparation of Progress Reports, Discharge Reports, and/or Subsequent Treatment Plans</i> | 80 |
| <i>Outcomes</i> | 81 |
| <i>Consumable Goods Used in Therapy</i> | 81 |
| BARRIERS TO RECOVERY AND COMPLICATING FACTORS | 83 |
| BARRIERS..... | 83 |
| COMPLICATING FACTORS..... | 83 |
| CONCLUSION | 85 |
| APPLICATION OF GUIDELINES TO INDIVIDUAL PATIENTS | 85 |
| REFERENCES | 87 |

OPA GUIDELINES FOR ASSESSMENT AND TREATMENT IN AUTO INSURANCE CLAIMS

Introduction

PURPOSE OF THE GUIDELINE

Consistent with the purposes of the 1990 Ontario Psychological Association (OPA) Guide to Fees and Billing Practices, the 2001 Psychology Assessment and Treatment Guidelines, published by the Financial Services Commission of Ontario (FSCO), and the 2005 OPA Guidelines for assessment and treatment in auto insurance claims, published by the Ontario Psychological Association, these Ontario Psychological Association Guidelines for Assessment and Treatment in Auto Insurance Claims are intended to provide assistance and guidance to psychologists and those using their services. We also have prepared a handbook to be a practical summary of the Guidelines. The Handbook and Guidelines are meant to be educational, not prescriptive. They are not intended to manualize assessment or treatment.

The documents reflect our current understanding of legislation, regulations, required forms, necessary processes, clinical science, and psychological practice in Ontario. We expect further updates will be required to respond to ongoing changes. Therefore, these documents should be viewed as living documents which will be continually improved and expanded upon. Instead, they are to function as guidelines for reasonable practices based on currently accepted community and professional standards.

METHOD OF DEVELOPMENT

The OPA Auto Task Force has been collecting feedback and suggestions since 2005 regarding how to improve the previous version of these guidelines. Many people reviewed the previous document and provided constructive suggestions, including treating psychologists within and outside Ontario, Insurance Examiner psychologists, a former American Psychological Association Practice Director, a former Society of Behavioral Medicine President, lawyers, and a Financial Services Commission of Ontario arbitrator. We sought further input and feedback from psychologists in the province who work in this sector throughout the process of developing the current revision. This document is the result of the Task Force's attempts to respond to concerns identified by all of these people, especially responding to psychologists engaged in both proposing and reviewing assessment and treatment plans.

The revision started by incorporating the feedback gathered since 2005. A review of the most recent scientific literature was completed and added to the previous document. During the revision process, the framework and ideas being considered were presented at a large workshop of both assessment/treatment plan providers and IE reviewers, and volunteers were sought for further review of the document. Once a draft of the full document was created, psychologists around the province who were known to have different views and practices were contacted to conduct a peer review of the manuscript. A broad variety of perspectives were sought in order to ensure applicability of the guidelines to as many practice situations as possible. The detailed feedback and suggestions provided were incorporated, and in general, represented considerable consensus among psychologists around practical concerns for practice. Understandably, however, these views did differ in many areas and represented varying regional concerns, areas of competence, and styles of practice. We have tried to respond to all of them, in order to make the guideline as flexible and responsive to psychologists' concerns as possible.

The OPA Board of Directors was pleased to review the Handbook and Guidelines in July 2010. This draft was approved in principle and will be published on the OPA website in August 2010. The documents will be submitted for formal approval by the Board of Directors at the fall meeting in October 2010.

Given the frequently changing regulatory context in Ontario, evolving science, and regular arbitration decisions that all affect clinical practice in this area, the OPA and the Auto Task Force recognize that future updates and revisions will continue to be required. We are committed to ongoing development and improvement of the guidelines, and encourage feedback to the Task Force by all users. We are also committed to ongoing education to facilitate utilization of the guideline by the profession. The Handbook and Guidelines reflect our current understanding of legislation, regulations, required forms, necessary processes, clinical science, and psychological practice in Ontario. We expect further updates will be required to respond to ongoing changes. Therefore, these documents should be viewed as living documents which will be continually improved and expanded upon.

DESCRIPTION OF THE HANDBOOK AND GUIDELINES

In these documents, we describe normative assessment and treatment practices based on current standards for practice, the scientific literature, and professional opinion regarding clinical practice in Ontario in 2010. These documents also include direction regarding how to evaluate these usual assessment and treatment practices. The Guidelines and Handbook are intended to be for multiple audiences, including psychologists, other care providers, lawyers, and adjusters. The documents are intended to provide an update and make recommendations for practice based on the applicable science and regulations, in the context of the clinical realities of practice in Ontario, so that all users can have a common set of expectations regarding what constitutes reasonable and necessary assessment and treatment proposals.

We included indicators for determining when to propose psychological assessment or treatment, direction regarding what is required to complete the new OCF-18, define when assessment and treatment are reasonable and necessary, provide a description of the assessment and examination processes, and detail reasonable associated costs for each. Typical assessment interventions and hours reasonably required for clinical/health/rehabilitation psychological assessments and the specific specialized assessments (psychovocational, psychoeducational, neuropsychological) are described and summarized. Guidelines for psychological treatment plan proposals also include considerations for ongoing evaluation and modification of treatment, treatment plan components, and reasonably required hours. A description of potential barriers to the patient's ability to participate in or complete proposed assessment or treatment is included, as is a list of potential factors that can complicate the assessment and treatment process, sometimes reasonably resulting in proposals with hours that fall in the upper end of the ranges presented.

The Guidelines offer reasonable frameworks for clinical assessment/examination and treatment that can be tailored to meet the needs of the individual patient and clinician (and borne in mind by a reviewer), rather than concrete directions for how to complete an individual assessment or review a peer's proposed clinical assessment or treatment plan.

The Guidelines do not provide direction regarding how to determine disability status, catastrophic impairment status, or perform a third party examination (whether insurer or plaintiff/claimant funded in legal cases) to answer specific questions. The OPA expects that these guidelines will provide the standard by which to review proposed psychological assessment and treatment plans by providing criteria by which to judge the reasonableness and necessity of proposed services. We encourage IE reviewers of assessment/examination and treatment plan proposals, as well as those proposing services, to use these guidelines.

ORGANIZATION

The information presented approximates the usual sequence of events that occurs when providing clinical psychological services under auto insurance in Ontario from assessment screening, proposal, conducting the assessment, proposing treatment, re-assessing to determine progress, and discharge or proposal for further treatment.

APPLICATION AND LIMITATIONS OF THE HANDBOOK AND GUIDELINES

The Handbook and Guidelines focus on individual psychological treatment of adults who suffer psycho-emotional impairments resulting from automobile accidents. Information on treatment for patient groups with other impairments may be added in future revisions. These documents describe psychological assessments and examinations, which are critical components of psychological treatment/rehabilitation for a range of patient situations.

This Handbook and Guidelines applies to treatment/rehabilitation of many patients with psychological impairments. They will be useful to psychologists proposing these services and to psychologists and others reviewing these proposals.

We focus on assessments that are part of treatment/rehabilitation. Additional assessments and examinations, such as those conducted to determine catastrophic impairment or disability status, are critical to the system but are not addressed here.

It is outside of our scope to discuss many important treatment/rehabilitation services provided by psychologists. We do not discuss services for patients with brain injuries/cognitive impairments or those provided to children, adolescents, and elderly adults. These services are effective and often vital to the recovery of the patient, but can be more variable, intensive, extensive, and therefore expensive than can be indicated in the treatment guideline tables. Exclusion from the Guidelines does not indicate a lack of support for these psychological services.

Psychologists provide a broad range of effective direct and consultative treatment/rehabilitation services which are not included in these Guidelines. These services include but are not limited to group therapy, family therapy, consultation to other educational/treatment/rehabilitation providers, and multi-disciplinary treatment/rehabilitation programs. In addition, some patients with brain injuries or severe psychological/psychiatric disorders may require inpatient assessment/treatment which we do not address here. The omission of these services from this Handbook and Guidelines should not be interpreted as minimizing their importance in returning an individual to their pre-MVA functional status.

CAUTION AND RECOMMENDATIONS

We also are reminded that because of the legal and regulatory requirements of practice in this area, there is much more to consider when conducting and reviewing assessments and/or treatment of an individual affected by an auto injury than simply his/her clinical presentation and/or diagnosed psychological disorder(s). Because clinical psychological assessments and opinions expressed in reports can have far-reaching legal and financial consequences for individual claimants and insurers, we must recommend that psychologists not enter into this area of practice until they are familiar with the applicable legal definitions, arbitration decisions, and regulations that must be considered when seeing these individuals, as well as the applicable science to deal with the clinical presentation. All psychologists providing and reviewing services under auto insurance in Ontario should be familiar with the content of these Guidelines, in order to address the science and regulations that apply to practice in this area; however, legal definitions and arbitrations are not reviewed here and should be pursued by practitioners separately.

We would also suggest that those asked by insurers to review assessment and treatment proposals (Insurer Examiners) ensure their comprehension of these issues before conducting their reviews, in order to ensure full understanding of how their opinions will be used in potential future settlements, court cases, and determination of benefits. Given the amount of knowledge required to function appropriately in this practice context, it is our recommendation that assessors, treaters, and examiners only submit and review proposals for services in areas consistent with their usual practices (e.g. pain management, PTSD/ anxiety disorders, neuropsychology, psychovocational rehabilitation).

The Guideline considers psychologists' assessment reports and accompanying treatment plans to be briefer and more similar to clinical consultation notes, with a focus on clinical presentation and treatment

needs. Other SABS benefit issues will generally be addressed in separate assessments and reports. These clinical reports will continue to address different issues than would a medical/legal report. To be sure, the SABS regulations require that psychologists provide services to rehabilitate MVA victims as far as possible to their previous states of functioning in multiple domains. This requires clinical investigation to identify treatable impairments resulting from the MVA. Given the intent of the changes to the regulations to streamline service, spend less time and money on assessment and reports, and focus more on quick access to efficient, effective treatment and rehabilitation, we are making these recommendations with caution, and suggest that psychologists use their best judgment in determining what works for the patients.

We also note that this change to the SABS and the resulting changes to these practice guidelines appear to be consistent with interpretations of the recent Amendments to the Rules of Civil Procedure. It is outside of the scope of these Guidelines to provide legal advice regarding compliance with the rules of evidence; however, it is our understanding that changes to this act differentiate between clinicians who have a treating doctor/patient relationship and those who assess for legal proceedings. These OPA guidelines speak to assessment and treatment plan proposals for clinical rehabilitative needs and review of these proposals, not to psychological-legal expert examinations or preparation to act as an expert witness to the court. It is our current understanding that, as a result of the changes to the rules of evidence, treating clinicians are more likely to be called as fact witnesses to describe diagnosis, prognosis, and treatment needs, while expert witnesses must be more concerned about issues of causation, legal tests requiring adjudicative certainty, and are expected to be impartial. Typically, treating psychologists will not be obligated to follow new Rules of Civil Procedure but should be familiar with them. In general, we must advise that psychologists should not enter their opinions without being aware of the legal ramifications and requirements.

General Principles

Psychologists play an important role in Ontario's health care system. Psychological factors are central to the health and improvement of health problems of all Canadians and psychologists are the professionals best trained to assess and treat psychological factors affecting health. The development of guidelines for assessment and treatment of psychological factors affecting the health of people injured in MVAs in Ontario is intended to establish a framework for the appropriate provision of high quality services that will result in improvements for the patient, cost-effective results for insurers, and less burden to the public systems resulting from chronic conditions and disabilities.

Psychologists see a very small proportion of individuals injured in MVAs in Ontario. The majority of MVA survivors do not receive psychological services, and while we are aware of some regional variability in this respect, it is our understanding from the province-wide data that those who do tend to be complex, with multiple impairments, and may be at high risk for developing chronic disabilities that create substantial costs to multiple systems. A current review of the science suggests that sound and timely psychological assessment can identify those at risk for developing persisting impairments and ensure early and appropriate intervention. When the psychologist takes the initiative to share information, psychological assessment also conveys valuable information to other health care providers to facilitate and direct appropriate rehabilitation, and can serve as an indispensable communication tool in explaining a given patient's lack of expected progress in their physical rehabilitation. Similarly, psychological treatments can prevent and reduce disability, return patients to work, reduce suffering, improve quality of life, and provide substantial cost savings to payors.

Patient groups seen by psychologists following an MVA include those suffering with amputations, brain injuries, chronic pain, spinal cord injuries, disfigurement, or the emotional consequences related to trauma and traumatic loss, such as grief, anxiety, and depression. Psychologists also work with patients who are experiencing difficulties participating fully in physical treatments and rehabilitation, adjusting to post-MVA changes in their lives, and adhering to healthy lifestyle recommendations made by their other health

providers. Psychologists assess and treat those who are trying to cope with ongoing pain, anxiety, impaired mood, behavioural change/dysregulation, changed relationships, financial strain, and limitations in functioning. In addition, psychologists provide treatment to the family members and dependents of injured people who are having their own difficulties adjusting to changed roles and responsibilities, and may experience their own emotional distress and/or behavioural alterations.

Current Standards and Ethical Practices

All psychological assessment and treatment is subject to current professional standards and ethical principles, as identified by the Canadian and Ontario Psychological Associations, as well as the College of Psychologists of Ontario. Specific standards for ethical practice with regard to assessments and treatments under auto insurance have also been published by the College of Psychologists of Ontario, and disability assessment standards have been published by the Canadian Academy of Psychologists in Disability Assessment. Organizations associated with specific areas of specialty training (e.g. pain/clinical health/rehab and neuropsychology) also publish clinical guidelines and principles for appropriate assessment and treatment of patients with particular conditions (e.g. International Association for the Study of Pain, International Neuropsychological Society, National Academy of Neuropsychology, etc.). Psychologists in all their practices are expected to adhere to the professional standards established by national and provincial associations, current scientific standards in their areas of expertise, and the College of Psychologists of Ontario. Psychologists practicing under auto insurance should be familiar with relevant publications and follow these specific relevant standards, as well as the content of these guidelines when proposing, conducting, and reviewing assessment and treatment services.

One final area of consideration when undertaking practice in this area pertains to the limits of confidentiality and protection of patients' personal health information. Psychologists practicing in all contexts must be aware of the usual provincial limits to confidentiality as defined by relevant legislation. In addition, one must be mindful of the fact that clinical reports in the auto context are routinely shared with adjusters, lawyers, reviewing assessors, and other health professionals. Given the increasingly adversarial nature of this work, one must also be prepared for requests from lawyers to release clinical notes and records prior to court proceedings. At the same time, psychologists must follow requirements for protection of patient personal health information as outlined by the Personal Health Information Protection Act (PHIPA) and ongoing orders and recommendations from the federal and provincial Information and Privacy Commissioners. In every case, the individual psychologist is ultimately responsible to ensure that all services provided to patients are conducted with patient consent; each assessment and treatment proposal must be submitted only after educating the patient about the process, the realistic limits of confidentiality and what reasonably can be expected from the process, and obtaining consent to proceed. Regardless of the role of other health providers, reviewers, or support staff in the process, this responsibility cannot be shifted and always resides with the assessing or treating psychologist. It is therefore incumbent on all individual clinicians to be aware of current legislation, precedents, and decisions that determine the extent to which we may collect, use, and disclose patients' personal health information before proceeding with work in this area.

The Practice Context of Assessment and Treatment in Auto Insurance Claims

THE SCOPE OF THE PROBLEM: PREVALENCE AND COST OF MENTAL ILLNESS AND DISABILITY **Prevalence and Description of Psychological Injuries and Impairment**

Brain injuries and mental/psychological impairments are real and debilitating. Various cognitive and emotional/mental conditions can result directly or indirectly from involvement in a motor vehicle accident. Consequently, the manifestations of such conditions result in lost productivity and costs that affect everyone. The World Health Organization's (WHO) most recent data for Canada from 2009 shows that the effect on years of productive life lost secondary to disability and premature mortality for a non-physical impairment such as unipolar depression (1157 life years lost per 100,000 population) is higher than the effect of all cardiovascular diseases combined (957 per 100,000); only the effect of all cancers

combined (1375) is greater. Similarly, the effects of panic disorder (97) and post-traumatic stress disorder (57) are both higher than the effects of Parkinson's disease (53), HIV/AIDS (45) and Multiple Sclerosis (36). Consistent with this, the RAND Institute (Seabury, Reville, Neuhauser, 2004) found that psychiatric injuries have the highest impact of all injury categories on disablement. When measured in terms of years lived with disability (YLD), depression is the leading cause of disability worldwide (Organization for Economic Cooperation and Development (2009).

Psychological Injuries and Disability after Motor Vehicle Accidents

Recent North American data specific to MVA survivors also indicate that the effects on functioning and indirect costs of physical and psychological impairments after an MVA are substantial.

Frequency of Accidents and Injury following MVAs

MVAs are the leading cause of accidental death and injury in the U.S (Benight et al., 2008). WHO (2004) statistics indicate that over 3000 people die in MVAs daily worldwide, with 20-30 million injured annually. According to these statistics, MVAs are the 11th cause of death in the U.S. for all citizens. Statistics for Canada and Ontario are similar. In Ontario, road injury rates per billion vehicle kilometers were approximately 534.8 in 2007, and 527.5 in 2006. Approximately 16,000 Canadians were visibly physically injured in MVA collisions or complained of pain after an MVA in 2007 (Acquired Brain Injury Rehabilitation information sheet, 2010).

Duckworth, Iezzi, and O'Donohue (2008) have reviewed the literature in this area and found that 86% of persons involved in an MVC [Motor Vehicle Collision] will experience only damage to their vehicles. However, the other 14% of persons involved in an MVC will experience, to some degree, pain and injury, medical costs, lost time from work, functional and lifestyle impairment, psychological distress, and systems stress (e.g., insurance and legal). According to the National Highway Traffic Safety Administration, MVCs are the leading cause of death among individuals between the ages of 1 and 34 years and the eighth leading cause of death across all ages. For every MVC fatality, there are approximately 79 individuals who require medical attention in emergency departments... The World Health Organization has estimated that by the year 2020 MVCs will rank second only to heart disease and depression in terms of disability. Across the world, the cost of MVCs has been estimated at 1% of the gross national product regardless of the development or motorization of a country. (pp. 3-4)

Frequency of Psychological Injury and Impairment following an MVA

The prevalence of mental illness disorders post-MVA has been examined by Mayou et al. in several studies (1993; 1997; 2001; 2002; 2003). Most recently, they followed 1148 people attending an emergency room after an MVA, and reported results on functioning up to three years later. These researchers found that 36% of participants reported symptoms consistent with at least one psychological disorder on initial presentation, and nearly 25% continued to report such problems one year later. Those with the most severe physical injuries were the most likely to report PTSD, travel anxiety, financial distress, and employment problems a year after injury. The presence of such conditions among those with multiple injuries also was associated with greater disability. Seventy percent reported effects on work, 60% experienced financial problems, 90% reported impaired social functioning, and 85% reported experiencing effects on recreation and avocational functioning. Similar results with regard to impaired functioning in multiple domains were reported at 3 years post-MVA. It is clear from these data that a significant minority of those injured in MVAs develop persisting impairments and disabilities that involve psychological factors, and that such impairments and disabilities are not minor in their effect on the patients, their families, or payor systems.

Persistent Pain

Persistent Pain - Prevalence

One of the most common injury presentations after an MVA is the report of pain. Although many people report initial, acute pain, for most people, this remits over time, as the physical injuries heal and are rehabilitated. Unfortunately, a subgroup will experience persisting, debilitating pain that becomes chronic. Mayou and Bryant (2001; 2002) found that of those who were injured initially, 46% reported recovering physically by 3 months. Of the 54% who continued to report physical problems at 3 months, only 7% reported that the problem continued a year later. By the one-year point, 55% of the total sample had recovered physically. Similar results were found at 3-year follow up. These results are consistent with those reported above that indicate that the majority of people injured in MVAs do not go on to develop persisting pain or functional limitations. However, also as suggested above, for the small proportion who do, the effects on their lives, and the costs to families, employers, and payor systems are often enormous.

Persistent Pain - Comorbidity

Continuing pain and functional limitations /restrictions often lead to adjustment, mood and anxiety disorders with affective, cognitive, and/or physiological symptoms (Geisser, et al., 1996). Sexual disorders and difficulties achieving good quality sleep are often reported and exacerbate symptoms of pain, anxiety, depression, and anger, further affecting physical and emotional wellness. As these conditions affect clients' abilities to function normally and participate fully in rehabilitative efforts, their persistence is associated with further functional limitations and participation restrictions.

Thus, while chronic, unresolved pain on its own may represent a significant stressor in the lives of many injury survivors, co-morbid conditions add to this stress, and necessarily complicate assessment and treatment of psychological factors associated with pain. Jenewein et al (2009) have referred to this combination of traumatic physical and psychological injuries as "polytrauma". Lew et al (2007) found that 97% of a sample of outpatients with polytrauma identified pain as a presenting problem. Most of the time with Traumatic Brain Injury (TBI), this is headache, often accompanied by other symptoms. The resulting loss of confidence and reduced self-esteem that can follow such situations often results in depressive symptoms, which understandably becomes an additional specific focus of treatment (Pepping & Prigatano, 2003).

Accordingly, Girona et al (2009) noted that, "Polytrauma... is complicated by the high frequency of accompanying emotional disorders or symptoms, the most common of which is PTSD. Given the bidirectional interactions between pain and several emotional states or symptom clusters, symptoms of one condition may exacerbate the other which can interfere with the rehabilitation process. Additionally, the overlap with symptoms of TBI is likely to complicate diagnostic and intervention efforts" (p.250) As this suggests, assessment and treatment of pain is complicated further if the patient is also coping with a co-morbid condition, such as, traumatic brain injury, impairment of cognitive function, or post-traumatic stress. However, we also note that neuropsychological deficits may be associated with chronic pain conditions, in the absence of brain injury (Libon, 2009).

In their review of this literature, Duckworth et al (2008) note that,

The general traumatic injury literature suggests that chronic pain and PTSD are co-occurring experiences for a significant number of injury survivors. The overlap between chronic pain and PTSD among injured persons is so significant that some authors have proposed chronic pain and PTSD to be mutually maintained. Although there are relatively few studies examining the co-occurrence of chronic pain and PTSD in the context of MVC-related injuries, these studies suggest that the combination of chronic pain and PTSD may contribute significantly to post-MVC psychosocial dysfunction and to the level of post-MVC medical and psychological intervention received (p. 331).

Jenewein, et al (2009) also note that, among patients with chronic pain, those with comorbid PTSD tend to report greater pain, distress, and disability than those without PTSD. In their longitudinal study, the authors found that of participants with Injury Severity Scores of 10 or more and GCS scores of 9 or more (severely physically injured without severe TBI) who required referral to an ICU following some kind of accident, MVAs were the most common accidents causing referral. 4.4% met full criteria for PTSD, 10% were considered to be subsyndromal 3 years post-MVA, and all continued to report persistent chronic pain.

Persistent Pain and Polytrauma– Natural Course

These authors also found that psychosocial variables within 2 weeks of the traumatic event did not predict pain status significantly 3 years later. Rather, differences in ability to predict pain at 3 years started to emerge at 6 and 12 months post-event, as distress and difficulties coping emerged. In their sample, more than 30% of the variance in pain status 3 years later was predicted by a combination of psychosocial variables at 6 and 12 months post-event. The only variable that was found during the first 2 weeks to predict pain status after 3 years was total post-traumatic stress symptomatology, suggesting that those demonstrating Acute Stress Disorder (ASD) symptoms in the immediate aftermath of an accident were at significantly greater risk for developing chronic pain later.

The authors also found that a measure of resilience and capacity to cope with stress, the Sense of Coherence Scale (SOC), initially did not discriminate between the groups, but diverged significantly over time between the pain-reporting and pain-free groups, resulting in significant associations with pain status at 3 years. This suggests that persistent pain and coping diverge over time: as pain decreases, resilience and the belief in one's ability to cope increases, while as pain increases or is maintained, these beliefs are eroded.

The authors suggest that their data support a mutual maintenance model of PTSD and pain (Sharp & Harvey, 2001), and that divergent SOC scores suggest that these provoke a fundamental change in personality and expectations regarding patient's abilities over time: "The development of chronic pain seems to be associated with processes further down the road, particularly the maintenance of psychopathological symptoms rather than with sociodemographic and accident-related variables shortly after the accident. Chronic pain may subsequently lead to profound personality changes" (p. 125).

Similarly, O'Donnell, Creamer, and Ludwig (2008) note that, "Psychological factors... exert an important influence on recovery following physical injury, with PTSD and depression being independently associated with poor quality of life and functional outcomes" (p.352) (Holbrook et al., 1999; Michaels et al, 2000). Consistent with this, many researchers have suggested that persistent pain and impairments in functioning are more predictive of long-term adjustment than injury severity or the characteristics of the initial event, and that comorbid psychological factors complicate this adjustment further (e.g., Mayou et al, 1993; Blanchard et al, 1997; Ehlers et al, 1998).

Post-Traumatic Stress

Post-Traumatic Stress - Prevalance

Current US epidemiologic data indicates that 60.7% of men and 51.2% of women have been exposed to a traumatic stressor in their lifetime, with 34.2% of men and 24.9% of women being exposed to more than one traumatic event, and 7.4% of the general population having PTSD; of these, 53% also have a concurrent mood disorder. With regard specifically to MVA-related PTSD, large-scale survey data conducted in the US indicate that 20-23% of respondents report being involved in a serious MVA at some point in their lives (Kessler, 1995; Norris, 1992), and that MVAs are the most frequently experienced traumatic event for males and the second most frequent for females, making them the single most common cause of Post-Traumatic Stress Disorder (PTSD) in the general population. Lifetime rates of PTSD following MVAs range from 6-12% (Breslau, et al., 1991; Kessler, 1995; Norris, 1992). It has been reported that approximately half of the people with post-traumatic stress symptoms in the general population have them due to an MVA (Holbrook et al, 1999).

Data suggest that the presence of PTSD/ASD at least 30 days post-MVA is 25 – 33% in samples from emergency rooms. But, at that time, psychological symptoms are not usually the presenting complaint. Rates of PTSD later in the rehabilitation process, once survivors are out of hospital and seeking psychological assessment or treatment are naturally higher. Among survivors of automobile accidents who are injured and require medical attention, 15-45% will develop PTSD within a year of the MVA (Blanchard & Hickling, 2004).

In their review of this literature, O'Donnell, Creamer, and Ludwig (2008) note that, Studies using consecutive or random hospital admissions report that the prevalence of PTSD following injury ranges from 2% to 30% at 12 months post injury, with the majority of studies falling between 10% and 30%... It is, however, important to consider the rates of subsyndromal PTSD when exploring the psychological consequences of MVC [Motor Vehicle Collisions]. Research suggests that individuals who do not have the required number of symptoms to warrant a full diagnosis of PTSD may still have comparable levels of impairment to those with a full diagnosis... subsyndromal PTSD may develop into full PTSD at a later date. Rates of PTSD usually double when subsyndromal cases are considered. (p.348)

Consistent with this, several studies indicate that 15-30% of those injured and presenting to emergency rooms after an MVA develop post-traumatic stress symptoms that, although they do not meet full criteria for PTSD, are associated with significant distress and/or limitations in functioning (Green, et al., 1993; Hickling & Blanchard, 1992). In fact, it has been noted that often, the degree to which an individual's functioning in various domains of his/her life is affected is indistinguishable between those with PTSD and those with subsyndromal symptom presentations. As a result of these and other similar sources of data, Benight, et al. (2008) estimate that 4.7 - 34.4% of people injured in vehicle accidents develop PTSD, but that rates nearly double when subsyndromal PTSD is included in the estimates.

Post-traumatic Stress - Comorbidity

In addition to PTSD, because a psychologically traumatic injury often also involves traumatic physical injury, and may result in significant functional limitations as a result, rates of comorbidity with other physical and psychological injuries are especially high among those injured survivors with PTSD. Schillaci et al (2009) report that approximately 83% of the general population with PTSD has at least one other psychiatric diagnosis; of these, they note that a significant proportion develop depression, and often another anxiety disorder.

Beck and Coffey (2007) reviewed the prevalence data for PTSD and concurrent disorders after an MVA, and found that 25 - 41% of samples reported symptoms consistent with a major depressive episode (MDE). They found that this was consistent with large epidemiologic data indicating that approximately half of people with PTSD experience MDE at some point in their lifetimes. Reviewing the same literature, Duckworth (2008) stated, "MDD [Major Depressive Disorder] has frequently been identified as co-occurring with PTSD, with co-morbidity estimates ranging from 26% to 59% across community, MVC-only, and mixed trauma samples" (p.326). These authors also report on the 48% lifetime comorbidity rate of MDD among respondents diagnosed with PTSD (Kessler et al, 1995), as well as results from Breslau et al (1991) where 39% of a sample of young urban adults with PTSD also had MDD. In this review, Duckworth (2008) further describes that "Breslau et al (2000) used data from the Epidemiologic Study of Young Adults and the NCS to estimate the risk of MDD in trauma-exposed individuals with PTSD to that of trauma-exposed individuals who did not develop PTSD and to that of individuals who did not experience a trauma. The results indicated that there was an increased risk of MDD in persons with PTSD but not in trauma-exposed individuals who did not develop PTSD following exposure. Pre-existing major depression ...increased the risk of PTSD threefold" (p. 326). These data indicate that depression and

PTSD often occur together, with depression being the most commonly diagnosed comorbid psychiatric diagnosis among those with PTSD in the general population.

Beck and Coffey (2007) did note a potentially higher rate of comorbidity with pain among those with MVA-related PTSD. Across their review, they found that 69% of MVA survivors with PTSD may have chronic pain, and conversely, that 50% of MVA survivors with chronic headache and other pain were found to have PTSD. This is higher than rates of chronic pain in the general population or in samples reporting pain after an MVA (see section on pain, above). They also reported that 7-31% of people with MVA-related PTSD have a concurrent second or third anxiety disorder, which is also consistent with larger epidemiologic data. However, when substance abuse rates among PTSD samples were compared, rates appear to be lower in MVA-related PTSD samples than in other PTSD research samples, and there did not appear to be any difference in rates between samples with MVA-PTSD and those without PTSD.

MVA-Related Post-Traumatic Stress - Impairment

With regard to the effects of PTSD on impairment and disability, research suggests that MVA survivors who have PTSD are more distressed and impaired in their usual functioning (performance at work/school/ homemaking, relationships with family or friends) than MVA survivors who do not have PTSD (Blanchard, Hickling, Taylor, & Loos, 1995), and that MVA survivors with concurrent depression and PTSD fare even worse as they are more distressed and impaired in their usual functioning, with symptoms that are slower to remit than those with PTSD alone (Blanchard, Buckley, Hickling, & Taylor, 1998). In total, Blanchard and Hickling (2004) found that even in a sample of MVA survivors who were not seeking psychological treatment, those with PTSD were impaired in all areas of functioning assessed. The authors concluded, “it is clear that meeting the criteria for PTSD subsequent to an MVA usually implies a major impact on the individual’s life” (p. 92).

Natural Course of Post-Traumatic Stress: Acute Stress Disorder, PTSD, and Natural Remission

Researchers now studying the effects of traumatic events on individuals note that although most people tend to respond initially with depressive and anxiety symptoms, these generally resolve, and the majority of affected people are able to go on with their lives without experiencing persisting emotional problems (Hickling, Kuhn, & Beck, 2008; Rothbaum et al, 1992; Shalev, 2002). For those who do experience difficulty, prevalence rates appear to differ depending on sampling techniques and types of injury studied; however, all data seem to suggest that rates increase in the initial weeks post-injury, then plateau, with most people who exhibit persisting acute stress symptoms later meeting criteria for PTSD.

Natural Course of Post-Traumatic Stress – Prevalence of Acute Stress Disorder (ASD)

With regard to responses after a serious injury (including, but not limited to MVAs), Creamer et al (2004) found that 1% of people admitted to a Level 1 Trauma Centre met criteria for ASD at discharge; this increased to 9% meeting criteria for PTSD 3 months later, and 10% one year later. In a series of studies specifically following injured MVA survivors who initially presented to hospital, Harvey and Bryant found that 13% met full criteria for ASD, with another 21% showing subclinical symptomatology within the post-event diagnostic period (Harvey and Bryant, 1998). Six months after the MVA, approximately 80% of those who were diagnosed with ASD met full diagnostic criteria for PTSD, and two years later, 80% still suffered with chronic PTSD (Harvey and Bryant, 1999; Harvey and Bryant, 2000).

Interestingly, approximately 11% of those never diagnosed with ASD later met criteria for PTSD (Bryant and Harvey, 1998). As a result, some revision of ASD criteria has been suggested, based on the proportion of individuals who exhibit subsyndromal ASD with significant impairments, and predictive factors regarding who goes on to develop full PTSD. Bryant (2003) now estimates that approximately 80% of people who meet criteria for full or subsyndromal ASD after an event go on to develop chronic PTSD.

We must note that all the available data in this area speak only to those who have presented to hospitals with injuries after an MVA. Since most clinical psychologists in Ontario are not working in hospitals, but rather are working in private practice or community settings, it may be that a significant proportion of

those seen for post-traumatic stress in the aftermath of an MVA only presented to a walk-in clinic, their family physician's office, an acute care centre, or to another the office of another provider with whom they already had a treating relationship (e.g. chiropractor). Anecdotal data suggest that, at least in Ontario, prevalence rates of ASD and PTSD following MVAs may be higher than those found in the research to date when people who do not present to hospitals are included.

Natural course of post-traumatic stress – Progression, Remission, and Recovery

If most people who react with some initial symptoms of depression and anxiety do not go on to develop ASD, and a significant minority of those meeting criteria for ASD do not necessarily go on to develop chronic PTSD, clearly there is a natural course of remission of these symptoms. This is a fairly new area of research, with most recent data being specific to MVA survivors. In this area of study, remission usually means that an individual who previously met criteria for PTSD no longer meets criteria for the full disorder, or exhibits significant subsyndromal PTSD. This is distinguished from recovery, which is a much higher standard to reach and indicates that the individual no longer meets criteria for either full or subsyndromal PTSD and has been returned very much in this regard to their pre-MVA level of driving and traveling functioning.

In their initial review of this, Blanchard and Hickling (2004) compiled information on 6- and 12-month remission rates from 10 studies of MVA-related PTSD. Their summary suggested that approximately 46% of those initially presenting with symptoms achieved significant remission by 12 months. Fewer studies were available to judge rates beyond that, and remission rates appeared variable, but not moving much beyond 50%. The authors concluded at that time, that the greatest amount of remission in post-traumatic symptoms appeared to occur within the first 6 months after the MVA.

Most recently, data on the progression of ASD to PTSD and natural remission has been made available from The Albany Motor Vehicle Accident (MVA) Project (Hickling, Kuhn, and Beck, 2008). As part of this project, Blanchard and Hickling (2004) followed individuals who did not participate in treatment. These participants were assessed 1 to 4 months after their accident, and then at 6 months and 1-year post-MVA. At 6 months, nearly 55% showed some remission in symptoms; of these, nearly 24% had improved to a subsyndromal level of PTSD, while the remaining 31% had recovered completely. Of course, this leaves 45% of the total sample for whom the symptom presentation and associated functional impairments continued to meet full criteria for PTSD.

Upon examining this data more closely, Hickling, Kuhn, and Beck (2008) describe the trajectory of this change as follows:

The month-by-month diagnostic status for the 48 MVA survivors who were initially diagnosed with PTSD showed that by 6 months the degree of remission had essentially stabilized, with little change over the next 6 months. A small group of individuals who were diagnosed with PTSD were followed out to 18 months post-MVC. The plateau-like response of PTSD remained across the interval with very little change occurring. These data indicate that the majority of MVC survivors who initially develop PTSD do show noticeable "spontaneous improvement" over the first 6 to 8 months. Approximately one-third will show complete recovery with no intervention. Thereafter, there is a very gradual increase in the remission rate, with a remission rate of about 65% at 12 months post-MVC... However, it is important to remember that improvement in PTSD symptoms is not equal to absence of symptoms. In many respects, these data strongly suggest the need for effective treatments of MVC-related PTSD, given the chronicity of this disorder. (pp. 369-370)

The authors of this study also noted that, in general, those who were originally diagnosed with subsyndromal PTSD showed more rapid remission than those who met full criteria for PTSD; however,

this was not true for all individuals with subsyndromal presentations, since two participants actually worsened over the six month period and then met criteria for delayed onset PTSD.

Natural Course of Post-Traumatic Stress – Progression, Remission, and Recovery

In a similar study, Carty et al (2006) followed 301 individuals who had been admitted to a trauma service after an MVA. In this sample, nearly half of the participants met criteria for Delayed Onset PTSD after one year, and most of these had been diagnosed with partial or subsyndromal PTSD at 3 months. Current data based on these and other studies indicates that delayed onset of PTSD occurs in 5-6% of MVA samples (Blanchard et al, 1996; Ehlers et al, 1998; Bryant & Harvey, 2002), although we must note again that sampling techniques may affect these estimates, since many of these studies either follow people who present to hospitals post-injury, or who are part of treatment-seeking samples. Nevertheless, the data reviewed above suggest that, rather than simply appearing in full later, the natural course of Delayed Onset PTSD appears to result from subclinical post-traumatic stress symptoms that, instead of resolving (as appears to be the case for most people), increase and intensify in some individuals, such that criteria for full PTSD are met later. As Duckworth (2008) notes, “The delayed onset of PTSD symptoms may be a function of ongoing stressors. This is especially likely in the MVC context... in which an individual’s psychological adjustment is influenced by chronic post-injury pain, persisting physical disabilities, and mounting financial difficulties” (p.318).

Depression

Depression – Prevalence and Post-traumatic Progression

Recent clinical guidelines on the management of depression within Canada report an annual prevalence rate of approximately 4% of people affected each year, and approximately 11% of Canadians being affected at some point during their lifetime (Patten et al, 2009). The authors of these depression guidelines also review the data on remission rates and the natural course of recovery from depression. Like the data reviewed for PTSD, approximately half of those initially diagnosed with a major depressive episode were found to recover within 3 months. However, the recovery rate is described as flattening over time, such that, approximately “20% would have chronic episodes persisting longer than 24 months... respondents with lifetime MDD reported a single episode 56% of the time, 2 episodes 28.6% of the time and 3 or more lifetime episodes 15.4% of the time... it is likely that these are underestimates... the probability of recovery appears to decline with increasing episode duration” (p.8). These authors also note the difficulties with identifying those with depression, since as many as two-thirds of depressed individuals present to their family physicians with somatic symptoms only, and, understandably, up to half are not recognized as depressed (Cepoiu, et al, 2008, cited by Patten et al, 2009).

We note that the general literature on assessment and treatment of depression does not distinguish between depression that occurs after a significant event, such as an MVA, or depression that occurs spontaneously. O’Donnell (2008) in particular noted the lack of information available on post-traumatic depression. In one of the few reviews of this literature, Duckworth (2008) reports on studies of people who had presented to hospital following a significant trauma. In varying samples, depression was diagnosed in 19% of participants at admission (Michaels et al, 2000) and at 1-month follow up (Shalev et al, 1998), while 60% were depressed at discharge (Holbrook et al, 1998); 14.2% met criteria at 4 months (Shalev et al, 1998), 30-40% were still depressed 6 months post-discharge (Holbrook et al, 1998; Michaels et al, 2000), and 28% met criteria at one year (Michaels, 2000). With regard more specifically to post-traumatic depression occurring after an MVA, Duckworth (2008) reports rates of depression in the literature of 10-23% at 1-4 months post-MVA, approximately 13% at 7-9 months, and 8-16% at 12 months. These results are similar to rates of 11% at admission and 16% at 12 months, found by O’Donnell and colleagues (2008) in their mixed trauma sample.

We note that, in addition to the lack of available data on this topic, research in this area suffers from the same potential limitation as much of the research on post-traumatic stress; that is, that participants are recruited from those who present to hospitals following injury. For the same reasons, we cannot be sure if rates of depression would be different if all people injured in MVAs, including those who do not present

to hospital after the MVA were followed; this is particularly relevant, given what appears to be an increase in rates over time from initial admission. Consistent with this, O'Donnell et al (2008) suggest that "In our sample, a substantial proportion of posttraumatic depression occurred alone and not in the context of PTSD... It may be that depression is more influenced by intervening factors related to the traumatic event (such as delays in physical recovery or other subsequent life stressors) rather than the traumatic event itself... for some cases the depression may be completely unrelated to the traumatic event at all" (p.931). We note that this hypothesis is consistent with data reported by Jenewein et al (2009) cited earlier, in which depression developed over time among polytrauma patients.

Traumatic Brain Injury (TBI)

Traumatic Brain Injury (TBI) - Prevalence

The general point prevalence of TBI in the US is estimated by the Centers for Disease Control to be approximately 2%, with 0.6% of the population suffering non-fatal, non-serious TBIs per year (Family caregiver alliance, 2010). In Canada, TBI is the leading killer and disabling of Canadians under the age of 40 and is the injury most likely to result in death or disability compared to any other injury (Health Canada (2009). Approximately 5000 patients are hospitalized each year in Ontario as a result of TBI, with roughly 2,000 of these sustaining injuries that leave them with physical, mental, emotional, or behavioural after-effects severe enough to prevent a resumption of their previous pattern of activities or work (Ontario Neurotrauma Foundation, 2010).

Traumatic Brain Injury (TBI) – Impairment and Service Needs

After presentation to emergency rooms, approximately 77% of patients with TBI in Ontario are discharged home post-injury. And, although most of these may go on to function well with supports in the community, current data indicates that 7.9% of TBI cases seen in hospitals in Ontario are re-admitted at some later point, with 3.2% re-admitted within 1 month of discharge (Ontario Neurotrauma Foundation, 2010). Estimates indicate that approximately 62.3/10,000 adults over the age of 15 years live in the community with enduring effects of moderate to severe TBI (this does not include mild TBI survivors), and approximately 12.5-80% never return to work (Family Caregiver Alliance, 2010). In Canada, 66% of TBI survivors live with some ongoing need for assistance (Family Caregiver Alliance, 2010). As a result, in 2006, there were 17,484 "episodes of care" for TBI in Ontario communities that do not include emergency room visits (Ontario Neurotrauma Foundation, 2010). Adding this up, current US estimates are that approximately 2% of the total population are living with disability due to TBI; 80% of these are thought to be due to mild TBI, 10% to moderate, 10% to severe. Canadian percentages are expected to be similar. However, it is noted that current data are based on emergency room presentation following injury and are therefore underestimates of actual incidence.

Traumatic Brain Injury (TBI) – Mild TBI

Fortunately, most of these injuries are mild (as illustrated by the above statistics, mild traumatic brain injury is approximately 8 times more common than moderate or severe). Incidence of mTBI (mild Traumatic Brain Injury) in Ontario is estimated to range between 426-653/10,000, depending on whether family physician diagnoses are included or excluded (Ontario Neurotrauma Foundation, 2010). Many more also sustain mild brain injuries that are not severe enough to require hospitalization. Individuals with such brain injuries are often hospitalized for other accident-related impairments, such as orthopaedic injuries, but in this context, treating professionals may not readily recognize mild TBI. It can be missed or underestimated due to a focus on other, sometimes critical triage issues.

Of the three severity categories, mild TBI is much more difficult to diagnose than moderate or severe brain injuries. Reasons for this include quick resolution of the acute signs and symptoms of injury (e.g., post-traumatic amnesia, loss of consciousness, etc), and the fact that such injuries typically do not show evidence on neuroimaging, since such technology is not sufficiently sensitive to reveal related cortical changes following mild trauma (Ruff et al, 2009). Definitional differences among diagnosing specialties (neurology, neurosurgery, neuropsychology, etc.) and international organizations (e.g. World Health Organization, American Congress of Rehabilitation Medicine, etc.) also affect consideration of criteria

and diagnosis. As a result, mild TBI is much more likely to go unrecognized and unaddressed than moderate or severe TBI.

Despite being considered “mild”, it is clear that in some instances even such “mild” brain injuries may lead to significant impairments for the individual. Current data indicate that approximately 10-15% of mild Traumatic Brain Injury (mTBI) patients will experience persistent, intrusive, and impairing symptoms (including headache, fatigue, poor sleep, cognitive impairment, and mood disturbances) after the “normal recovery period of 3 months post-injury” (Ontario Neurotrauma Foundation website, 2010).

Mild brain trauma is an impairment of brain functioning due to trauma to the central nervous system that generally is not severe enough to require hospitalization or institutional care. Effects can be very temporary, or can persist longer term, as well as more permanently. "Mild" in this context does not reflect that the impact on the person's ability to function normally is necessarily slight or trivial, as the relative consequence to a person's functional and affective status can be significant. In effect, even "mild" brain trauma can have devastating effects on vocational, social, and everyday functioning for a subset of those with mild traumatic brain injury whose recovery is more delayed or complicated.

Problems that some patients with mild traumatic brain injury may experience include the following for example:

- Vascular (migraine) type headaches
- Difficulty understanding what is said
- Difficulty reading and/or writing
- Difficulty in word finding or speech
- Trouble maintaining attention
- Slowed thinking
- Unusual forgetfulness
- High distractibility
- Difficulty getting organized
- Easy and unusual mental fatigue
- Depression or rapid mood shifts
- Irritability, loss of temper control
- Loss of interest in sex and social activities
- Hypersensitivity to bright light
- Hypersensitivity to noise (e.g., radio, TV, traffic)
- Dizziness or balance difficulties
- Weakness on one or both sides of the body
- Poor impulse control
- Unusual emotional presentation (e.g. flat/expressionless, poor emotional regulation, etc.)
- Difficulty with decision-making or problem-solving.

Such symptoms may be present following head trauma, and quite often with negative findings using current neuroimaging technology. The nerve cell damage that occurs in brain injury can be widespread and microscopic, and damage may not be apparent on x-rays, CAT scans, MRI, or neurological exams (although Diffuse Tensor Imaging is showing some promise in being able to capture this diffuse microscopic damage common in head trauma). Brain trauma causes cognitive difficulties both by the blunt force trauma and secondarily by triggering neurochemical changes in the brain that cannot be readily identified by standard neurological examination, x-rays, CT scan, or MRI examination. Unfortunately, to date, few studies have addressed the psychological distress associated with post-mTBI-related disability, prognosis, and ongoing symptoms.

TBI and post-traumatic stress

Although it had previously been thought that incurring a traumatic brain injury with loss of consciousness and/or post-traumatic amnesia would provide some protection against development of PTSD, this has not proven to be the case. As Bryant (2008) notes in his review of this literature, “recent studies indicate that both ASD and PTSD occur frequently following MTBI. Although MTBI patients have impaired consciousness for a period at the time of their trauma, they typically report memory for events that occurred after consciousness resumed. Consequently, they can frequently recall distressing aspects of their experiences” (p.119).

With regard specifically to mTBI and post-traumatic stress after an MVA, Harvey and Bryant (1998) found that 14% of their sample of people presenting to hospital met criteria for ASD. When these patients were assessed 6 months later, 24% met criteria for PTSD (Bryant and Harvey, 1998). Some evidence suggests that when acute and post-traumatic stress accompany mTBI, recovery time from the mTBI symptoms is prolonged (Carroll, et al., 2004). In this study, 47% of patients (14 and older) continued to have moderate to severe disability one year after incurring an mTBI, and poor outcome was worse for individuals over 40 years of age with pre-existing conditions.

It is therefore worthwhile to try to identify those with concurrent post-traumatic stress symptoms and mTBI. However, as Bryant (2008) advises, “clinicians should approach the task of diagnosing ASD in brain-injured individuals with caution... It is unlikely that these patients can be described as suffering from ASD because of the significant problems associated with assessing psychological response to trauma during prolonged posttraumatic amnesia. The patient who is still in posttraumatic amnesia several weeks after the trauma could not be diagnosed with the dissociative symptoms described in the ASD criteria because of the overlap between the dissociative and TBI symptoms during amnesia” (p.120). We must therefore recommend caution and a careful interview and collateral data when trying to make this kind of differential diagnosis.

Other Impairments and Disorders

Cognitive Impairment without Brain Injury

Particularly within the MVA population where patients often present with multiple types of injuries, the source of cognitive impairments often goes well beyond that of brain compromise, and more often than not, involves multiple factors. In fact, the significant influence of psycho-emotional and somatic factors are commonly sufficient to bring about substantive cognitive difficulties completely *in absence* of brain trauma/impairment. This ability of factors other than brain injury to affect cognition is apparent in current diagnostic criteria for many common mental health conditions. For example, Major depressive episode (diagnostic Criterion A4), Dysthymic Disorder (diagnostic Criterion B5), Posttraumatic Stress Disorder (diagnostic Criterion D3), Generalized Anxiety Disorder (diagnostic Criterion D3), and Sleep Disorders (e.g. Primary Insomnia, referenced under “Diagnostic Features”). Moreover, in recognizing a distinct category of “Concentration, persistence and pace” and recognizing the important input of cognitive assessment (p. 293) in the rating of Mental/Behavioural Disorders, The AMA Guides to the Evaluation of Permanent Impairment (4th Edition) also formally acknowledges the link between mental illness and cognition.

The contribution of chronic musculoskeletal pain conditions in absence of brain trauma upon cognitive functioning is also well established on the basis of neuropsychological investigation (Hart et al., 2000; Nicholson, 2000). Although not restricted to such domains, such studies demonstrate that most commonly cited impairments on testing involve attentional processes, memory, and psychomotor processing/speed. In summarizing the related literature (including Peyron et al., 2000), Hart et al. (2003) note that, “Research suggests that pain-related negative emotions and stress potentially impact cognitive functioning independent of the effects of pain intensity. The anterior cingulate cortex is likely an integral component of the neural system that mediates the impact of pain-related distress on cognitive functions, such as the allocation of attentional resources” (p. 116).

Severe physical impairments/disorders

Patient groups seen by psychologists following an MVA also include those suffering with amputations, paraplegia, tetraplegia, disfigurement, and scarring. Psychologists also work with patients with severe physical disabilities (and their families) who are experiencing difficulties participating fully in physical treatments and rehabilitation, adjusting to post-MVA changes in their lives, and adhering to challenging and demanding treatment and care. Often, the psychological problems of these patients may not be adequately addressed or recognized because of the severity of their physical disabilities, which understandably appear more obvious and often take precedence over evaluation of mental health needs. However, individuals experiencing such difficulties may evidence elevated risk and problems with impaired self-concept, comorbidity with PTSD and other psychological problems, as well as suicidal behavior (Jurisic and Marusic, 2009) necessitating psychological assessment and intervention.

Other impairments/disorders and comorbidity

Although less studied, other impairments and conditions frequently occur and complicate the clinical picture for rehabilitation. For example, travel anxiety has been noted in 11-28% of samples and is one of the most limiting and interfering psychosocial effects of MVA survivorship (Blanchard and Hickling, 2004). With regard to other anxiety disorders, such as Generalized Anxiety Disorder (GAD), which is characterized by uncontrollable worry and also occurs commonly after an MVA, Duckworth (2008) suggests that because “the consequences of a serious MVC are often multiple and frequently include physical injury and pain, occupational impairment, and financial strain, role changes, and interpersonal distress, the MVC context appears to be particularly conducive to the development of worry of the type that characterizes GAD” (p.322). In keeping with this, GAD has been diagnosed in just over 12% of samples within the first few months following MVA or other trauma (Blanchard et al, 1995; Maes et al, 2000), and 9 - 21% at one year (Blanchard et al, 1995; Blanchard and Hickling, 2004).

Duckworth (2008) also notes that the flexibility required to adjust to system demands after an MVA could challenge those with personality disorders and contribute to an exacerbation of disordered behaviour. Consistent with this, substance use disorders have been diagnosed in approximately 17% of samples (Blanchard & Hickling, 2004), and increased irritability, hostility, and difficulty controlling anger are very common and have been identified as important factors in slowing treatment progress (Taylor, et al., 2001). Additionally, many of these symptom presentations co-occur, complicating the rehabilitation process further.

Children and Adolescents

Children and adolescents - TBI

Traumatic injuries from different sources, including those involving car accidents, are the leading cause of death in children and adolescents. Adolescents are particularly vulnerable. For example, Yeates (2010), reporting on the epidemiological studies of brain injury in children, noted that “older adolescents ages 15 to 19 show the highest rate of hospitalizations and deaths, with a combined annual incidence of about 150 per 100,000, probably reflecting the increasing severity of TBI in that age group as a function of motor vehicle collisions” (p. 114).

Assessment and treatment of youth injured in MVAs is critical to minimizing the extent to which they lose ground relative to their peers in the areas of academics, socialization and interpersonal relationships, independence and adaptive living skills, and building of new skills and abilities in the context of recreation and leisure. More so than adults, children are more vulnerable to the ill effects of an accident, as the impact of their injuries may “derail” them in terms of their developmental trajectory, making it difficult, and at times impossible, for them to catch up to their peer group. Children do not have the benefit of years of consolidated knowledge and skills, as is the case with their injured adult counterparts. They are at the added disadvantage of trying to learn and develop these critical skills and knowledge in the context of their injuries, and in the case of ABIs, often with impaired neurocognitive functions.

In cases of moderate to severe brain injuries, children demonstrate some improvement and recovery initially following the accident, with a plateauing of recovery evident. The rate of recovery varies as a function of many factors. Research has however pointed to a slower rate of change or recovery over time and more significant residual deficits after the recovery plateau for younger children than for older children with injuries of equivalent severity (Anderson et al., 2005; Catroppa et al, 2008).

A pattern of worsened skill consolidation over time relative to peers may also emerge as the impact of the acquired brain injury slows their development and the gap between the child and their peers increases, in particular in the domains of academic skill acquisition. This is particularly the case as the social and academic environments become increasingly complex as the child matures, requiring ever more abstract skills and knowledge, and a higher level of psychosocial adaptation. A child may be then identified with a learning disability and exceptional learning needs within the context of their schooling, even years after their injury.

Brain injuries occurring at young ages are known to set the stage for later emerging impairments and disabilities, that is, latent or delayed sequelae, an issue that is quite unique to injury in children. For example, an examiner may not be able to fully assess the impact to frontal lobe functioning when conducting a neuropsychological assessment of a very young child. It is only at a later point in the child's development that these abilities can be more fully evaluated, that is, at a time when we would expect to see the natural emergence of more critical, frontally-mediated executive cognitive, behavioural and emotion regulation functions. These factors necessitate that psychologists follow and monitor a child's recovery well beyond the typical period used for adults, in an effort to more precisely inform ongoing rehabilitative and academic planning in view of the possible changing landscape of needs.

The issue of mild traumatic brain injury must also be considered carefully. Children and adolescents can have varied outcomes after this kind of injury. Research has found that mild TBI may have "particularly deleterious effects" for preschool children (Gronwall et al. 1997). Mild TBIs or concussions should not be considered innocuous events, as more recent neuroimaging studies have highlighted (Bigler, 2008). Outcomes following mTBI in children are multi-determined, with factors such as cognitive level or "cognitive reserve" being highlighted (Fay et al., 2010), as is the child's familial environment (e.g., Taylor et al., 1999, 2004). A model of treatment that includes family members and larger extended systems (i.e., school, team coaches) is essential to optimizing successful outcomes for children (Ylvisaker et al., 2005).

Children and adolescents - PTSD

Psychological assessment of children and adolescents who are victims of motor vehicle accidents may be overlooked despite this population being exposed to the same traumatic experiences as adults. Despite often being overlooked for assessment and treatment related to trauma from a MVA, one study found that 1 in 3 children involved in road traffic accidents was found to suffer from PTSD, regardless of type of accident, age of the child, or the nature of the injuries (Stallard, Velleman, & Baldwin, 1998). Another study found that 25% of children reported persistent PTSD symptoms 3 months after the accident, even when the accidents were not apparently serious in nature (Shafer, Barkmann, Riedesser & Schulte-Markwort (2006). Many children suffer not only from Posttraumatic Stress Disorder following these incidents, but comorbid disorders are also common, such as depression, specific phobia, and separation anxiety. Comorbidities in this population result in a complex presentation and place the child/adolescent at risk for psychological after-effects, even years after the trauma (Mghaieth, et al, 2007 and Keppel-Benson et al, 2002).

Research conducted by Sturms et al (2005) found that at three months following a pediatric traffic injury 12% of the children and 16% of their parents reported serious posttraumatic stress symptoms. A study conducted by Landolt, Vollrath, Timm, Gnehm, and Sennhauser (2005) found that the severity of the father's symptoms of PTSD significantly predicted the child's symptoms of posttraumatic stress. Meiser-Steadman et al (2009) found that posttraumatic stress symptomatology and PTSD at six months post-

trauma was associated with maladaptive appraisals and beliefs in children and adolescents 2 to 4 weeks post accident. Further, in their study, maladaptive appraisals were found to be involved in the development and maintenance of posttraumatic stress symptomatology independent of demographic or objective physical trauma.

Children and adolescents – Effects of Injured Family Members

Even children not directly involved in the accident itself can suffer in the aftermath of an accident if a family member has been significantly injured. The lack of availability of a parent due to prolonged hospitalization, or a change in their parenting roles due to persisting post accident symptoms has a profound impact on a child's adjustment and status. The more persisting and pervasive the disruption in the family system, the more adverse the child's reactions may be. These findings highlight the importance of providing assessment and treatment to parents of children who have been injured, as well as the children.

Litigation Stress

Finally, in terms of those factors affecting an individual's clinical presentation and potential need for services, it has been suggested by some that patients engaged in the litigation process may present differently from those patients not engaged in litigation. Beck and Coffey (2007) and Duckworth (2008) have reviewed much of the literature cited below, and refuted this suggestion.

First, Blanchard and colleagues (1998) found that of 132 individuals injured in MVAs, 67 initiated litigation and 65 did not. At initial assessment, those who had initiated litigation but settled their cases reported more symptoms than those who also had initiated litigation, but had not yet settled; these latter, in turn, reported fewer PTSD symptoms than both groups engaged in litigation. However, by one year, all participants reported a reduction in posttraumatic stress symptoms, regardless of litigation status or injury severity, and 83% of those with pending litigation had returned to work. Similarly, Bryant and Harvey (2003) also found that of 171 litigating and non-litigating survivors, most had returned to work 6 months after the MVA, regardless of litigation status.

Consistent with this, Mayou and colleagues (1993, 2001, 2002, 2003) have followed the largest sample of survivors from the emergency room to 6 years post-MVA, and have found no differences in symptom presentation among litigating and non-litigating participants. By six years post-MVA, there were no differences in physical complaints, mental state, or social functioning between those who had settled versus those with currently active cases. The authors concluded that neither litigating nor settling for a cash amount had any effect on report of symptoms.

As a result, Beck and Coffey (2007) concluded that, "the available data do not support the contention that there is widespread deceit among assessment- or treatment- seeking MVA survivors". Rather, the more consistent data suggests as Duckworth (2008) concluded that, "Litigation appears to be experienced by litigating MVC survivors as an overwhelming stressor" (p.337), not a reason to misrepresent symptoms.

Cost of psychological impairments

Based on the research data reviewed above, we can conclude that, psychological conditions and disorders commonly occur in a significant proportion of injured people and are associated with very real impairments and disabilities. Naturally, such impairments result in inevitable costs to various systems, including health care systems in terms of utilization, and employer systems in terms of lost productivity. In their comprehensive review of 1998 Health Canada data, Stephens and Joubert (2001) reported that mental disorders continued to be a leading contributor to the economic burden of illness in Canada. The authors estimated the annual national economic burden at that time (direct and indirect costs) of depression and general psychological distress at \$14.4 billion. These data are consistent with similar results from the United States indicating that the annual per capita health and disability costs of depression are greater than those associated with hypertension and similar to those for heart disease, diabetes, and back pain (Druss, Rosenheck, & Sledge, 2000).

As sobering as these facts are, they nevertheless do not capture the full extent of the problem. As Hunsley (2003) indicates, data on the burden of mental illness, such as those examined by Stephens and Joubert (2001) usually do not include the full range of conditions and mental health disorders, such as anxiety disorders and general medical conditions, for which treatment by psychologists could reduce the burden of disease.

Cost of psychological impairments - Depression

To illustrate, Patten et al. (2009) note that Major Depressive Disorder (MDD) or depressive symptoms can negatively affect physical health by reducing adherence to medical treatment, reducing participation in preventive activities, and altering risk factors such as obesity, smoking, and sedentary lifestyles.

These authors also note that depression is associated with severe impairments in Quality of Life (QOL): “MDD has a disproportionately large impact on education, work productivity, relationships and parenting, all of which may appear to be the presenting problem” (p. S9). In terms of effects on functioning, the authors review data suggesting that when occupational performance was compared, “depressed workers had significantly greater performance deficits than control workers (who had rheumatoid arthritis) with regard to performing mental interpersonal tasks, time management, output tasks and physical tasks... clinical improvement did not result in full recovery of job performance” (Patten et al., 2009, p.S9). We also note the observation that there is a joint effect on disability when depression is combined with chronic physical diseases (Schmitz et al 2007).

Cost of psychological impairments - PTSD

Similarly, Deykin et al (2001) found that patients with higher medical utilization rates were almost twice as likely as low users (27.5% vs. 14.8%) to have PTSD. Both concurrent depression and physician-diagnosed physical conditions were found to add to the prediction of medical utilization among PTSD-diagnosed adults. The authors concluded, “PTSD, alone and in combination with depression, has a direct negative relationship with physical health that, in turn, is associated with more frequent use of primary health care services”. Similarly, Walker et al (2003) found that compared with women who had few post-traumatic stress symptoms, those with a moderate number of symptoms had 38% greater annual costs, and those with the greatest number of symptoms had 104% greater costs, even after adjusting for depression, chronic medical disease, and demographic factors. The authors concluded that “these findings are similar to those found in studies of costs related to major depression and suggest that instituting health services interventions to improve recognition and treatment of PTSD in primary and specialty care clinics may be a cost-effective approach for lowering the prevalence of this disorder”.

Cost of psychological impairments – MVA-specific

Emerging data on the costs of MVA-related psychological impairments are consistent with these results and those of non-MVA health insurance data indicating high costs associated with failing to treat impairments, such as PTSD. An Australian study found that the total health and economic cost in Australian dollars for a sample of 391 motor vehicle accident victims was A\$6,369,519.52. Using self-report data, the authors found that 31% of the sample were depressed, 62% were anxious, and 29% met criteria for PTSD nine months after their respective accidents. Of particular relevance to any attempts to find costs savings is the following: PTSD cases incurred significantly higher health care costs compared with non-PTSD cases, and untreated PTSD cases incurred the highest costs of all. These results were considered statistically and economically significant. The authors concluded that, “the health and economic costs associated with motor vehicle accidents are enormous. Psychiatric morbidity among victims was high, and motor vehicle accident-related PTSD significantly contributed to increased overall health care and economic costs.” (Chan, Medicine, Air, & McFarlane, 2003).

Efficacy and cost-effectiveness of psychological intervention

Efficacy and cost-effectiveness of psychological intervention – Problems of Current Spending

Psychologists play an important role in potentially alleviating this state of affairs. In their brief presented to the Romanow Commission, the Canadian Psychological Association (2001) indicated that approximately 30% to 60% of patient concerns presented to primary care physicians result directly from psychological factors, or are significantly influenced by them. This suggests that psychologists should play an integral role in any health system aimed at streamlining and providing comprehensive care to patients, and is particularly important when considered in the context of comprehensive insurance systems where all treatments are managed by a single payor.

Current spending on health care focused on pharmaceutical and medical interventions is similarly problematic, and a potential area of cost-savings exists with psychological intervention. Recent Canadian data indicate that lipid reduction, antihypertensives, anti-inflammatories (analgesics), gastrointestinal, anti-infectives, and psychotropic medications in Quebec alone accounted for more than 50% of total spending in that province's drug plans. Prescription drug costs grew by nearly 60% from 1997 to 2000, with psychotropic drugs growing the fastest among these, increasing 115.4% over the same period (Quebec, 2001). The high cost of drugs is also reflected in federal data, which indicated that spending on drugs in Canada was greater than spending on all physician services combined. This observation has led some to suggest that such growth rates are unsustainable for public and private drug plans, which have been underwriting costs based on old data (Canadian Institute for Health Information, 2001). As a result, Romanow and Marchildon (2003) suggested "Canada may be on an unsustainable prescription drug trajectory if current prescription and utilization patterns persist" (p.292).

Efficacy and cost-effectiveness of psychological intervention – Pharmacotherapy vs Psychological Treatment

By comparison, the fact that psychotherapies produce lasting effects and prevent relapse makes them economically, as well as clinically viable alternatives to medication. This is especially relevant as the cost of medications increases, since clinically effective psychological interventions have proven to cost substantially less than similarly effective psychotropic medications. For example, studies of psychological interventions, such as cognitive-behavioural therapy for anxiety disorders, indicate equivalent or better clinical effectiveness and cost savings of 10-50%, compared to pharmacological treatment (Gould, Otto, and Pollack, 1995). Results for depression are even more striking. In an extremely comprehensive cost-effectiveness analysis of cognitive-behavioral therapy, Prozac, and combination therapy that took into account factors such as lost productivity, wages, taxes, and community service during treatment, Antonuccio, et al. (1997) found that cognitive-behavioural therapy was by far the least expensive treatment. Providing Prozac alone would cost an estimated 33% more than cognitive-behavioral therapy over a two-year period, and combination therapy would cost an estimated 23% more.

Dobson (2008) also reviewed some of the literature comparing relapse rates and the resulting costs of psychological treatment and medication for depression. He found that, "prior psychotherapy, either in the form of cognitive therapy (CT) or behavioral activation (BA), had an enduring effect that was at least as efficacious as continuing patients on medication and that held for the prevention of relapse and possibly recurrence... Although psychotherapy was more expensive to provide initially... the cumulative cost of continued medications proved to be more expensive by the end of the 1st year of follow-up in this study" (p.475). These results were found to be consistent with those achieved by Antonuccio et al (1997) and Hollon et al (2005).

Thus, a convincing and growing body of evidence is producing consistent results indicating that psychological interventions are not only at least as clinically effective as medications for some disorders, they may actually be more effective, and save valuable dollars, as well. Research data also indicate that psychotherapies produce lasting effects and prevent relapse, making them economically, as well as clinically viable alternatives to medication, especially as the cost of medications increases.

Efficacy and cost-effectiveness of psychological intervention – Cost-offsets of Psychological Intervention

However, the economic benefits of psychological interventions extend much further than simple comparisons with other treatments. In any health insurance system, patients with unmet mental health needs utilize medical services at a rate higher than the rest of the population. Often, these services involve physician consultation and medical testing for symptoms associated with mental health conditions (e.g. chest pain or parasthesias due to panic attacks). Besides improving health and increasing well-being, evidence has accumulated to show that psychological treatments can actually lower costs associated with other medical expenditures. Thus, the economic value of psychotherapy services is often defined in terms of its cost-offset. Medical cost-offset refers to the savings realized by employing appropriate psychological diagnostic and treatment services. In such analyses, the costs of administering psychological assessment and treatment and reducing other medical utilization are compared with the costs of usual care with no psychotherapy.

Psychological cost-offset studies show a decrease in total health care costs following mental health interventions even when the cost of the intervention is included. Offsets have also been reported to increase over time, largely because patients continue to decrease their overall use of the health care system and do not require additional mental health services. As noted by Antonuccio et al (1997), if psychotherapy teaches skills, these should generalize and continue forward, reducing future need for services. Consistent with this, Chiles, et al. (1999) conducted, a meta-analysis of 91 psychological treatment studies published from 1967 to 1997, and found that 90% resulted in cost-offsets ranging from 20-30% across studies. Only 7% reported treatment administration costs that exceeded the offset.

This effect has been demonstrated in a number of studies in the United States. For example, Lechnyr (1992; 1993) reported that when the Utah division of Kennecott Copper Corporation provided mental health counseling for employees, its hospital medical and surgical costs decreased 48.9%. The company's weekly claims costs dropped nearly 64.2%. In all, for every dollar spent on mental health care, the company saved \$5.78. Similarly, a study of Kaiser Permanente patients who received psychotherapy showed a 77.9% decrease in the average length of stay in the hospital, a 66.7% decrease in frequency of hospitalizations, a 48.6% decrease in the number of prescriptions written, a 48.6% decrease in the number of physicians seen for office visits, a 47.1% decrease in physician office visits, a 45.3% decrease in emergency room visits, and a 31.2% decrease in telephone contacts.

Similar figures have been reported in research specifically studying the costs of psychological interventions for medically ill patients. For example, in a large study conducted by researchers at Duke University Medical Center, cardiac patients who were taught to manage their stress enjoyed better health at less cost than patients who participated in an exercise program, or those given the hospital's standard heart care (Blumenthal, et al., 2002). Financial benefits were found in the first year of the study. Average costs (in US\$) for patients who were taught stress management were \$1,228 per patient, compared with \$2,352 per patient in the exercise group and \$4,523 per patient for those in the control group. The savings were immediate. However, when dollars were added up after five years, the difference was much more significant: the stress management group averaged expenses of \$9,251 each compared with \$14,997 for each member of the control group and \$15,688 for those in the exercise group.

Efficacy and cost-effectiveness of psychological intervention – Cost-offsets in Canada

A number of economic analyses of psychological interventions have been completed within Canada that are consistent with these results, demonstrating the benefits to Canadian payor systems of including psychological interventions. Consider the following:

- Providing a median of 12.5 hours of psychological intervention to patients at a family medical centre in London produced a 50% reduction in medical appointments in the 6 months following treatment, compared to the 6 months before treatment (Golden, 1997);
- Provision of six 90-minute group psychological treatment sessions to women with breast cancer in Calgary was associated with improved quality of life and adjustment to illness among participants,

and 23% fewer dollars billed to the provincial health care system over the following 2 years, compared to women who did not receive the intervention. The average savings per patient (approximately \$150) was greater than the estimated cost of providing the service (approximately \$100 per patient) (Simpson, Carlson, & Trew, 2001).

Efficacy and cost-effectiveness of psychological intervention – PTSD and Pain

In keeping with this, preliminary data indicate that the increased utilization shown by untreated injured people with PTSD decreases following targeted, clinically effective psychological intervention (Grunfeld, et al., 2003). With regard to treatments of MVA-related conditions, such as chronic pain, economic evaluations show that increasing secondary prevention treatment for pain conditions results in decreased health care costs due to surgery and disability. For instance, Goosens and Evers (1997) reviewed 23 economic analysis studies and concluded that programs including psychological interventions aimed at improving pain management produced cost savings due to reduced absenteeism. Similarly, a recent study of the clinical, medical utilization, and cost outcomes associated with including psychological treatment in a multidisciplinary approach to pain treatment found an 87% reduction in outpatient clinic visits in the first 3 months after treatment, resulting in a projected net annual saving of \$78,960 in the first year alone. Psychological components were also associated with greater consumer satisfaction (Peters et al., 2000).

Building on this, a study of patient satisfaction and costs associated with multidisciplinary pain treatment found that patients consistently rated psychological and educational therapies higher on satisfaction measures than physical therapy and medical modalities; this was true both at post-treatment and at follow-up evaluations. These therapies were considered to be highly effective and helpful, at a relatively low cost (Chapman, Jamison, Sanders, Lyman, & Lynch, 2000). Similarly, Jacobs (1987, 1988) found that psychological services provided to chronic pain patients resulted in a \$5 savings for each dollar spent on psychology. Thus, recent clinical studies have demonstrated the efficacy and cost benefits of including psychological services in interdisciplinary pain management programs (see Gardea & Gatchel, 2000 for a comprehensive review of this literature). Including psychological treatment in treatment of pain is important to patients, to the ultimate efficacy of the intervention, and to the financial bottom line. It is reasonable to assume that similar overall savings would occur in the treatment of patients with pain disorders resulting from motor vehicle accidents.

We note that the literature reviewed above simply represents a sampling reflecting some psychological disorders and interventions. In particular, this review does not include studies of neuropsychological and functional rehabilitation treatments that also are known to be effective.

Ontario Regulation 34/10: The New SABS

Although auto insurance legislation in Ontario provides the broad outlines of an insured's policy, the Statutory Accident Benefit Schedule (SABS) regulations provide the essential detail about what benefits are covered, the responsibilities of the insured person, the process for claiming and accessing benefits, and the various roles played by health professionals in the system.

BACKGROUND

The principle of first party insurance is that the benefits are designed to return the insured person to his/her pre-accident level of function in the family, work place, school, and community. However, this policy is constrained by a wide variety of limits, exceptions, and exclusions.

Under Bill 164 (1994 through Oct 31, 1996) all policies were for one million dollars. Under Bill 59 (November 1 1996, through September 30, 2003) one could also sue in court for excess future medical care costs if one were deemed to have a "catastrophic" impairment. Under Bill 198 (October 1, 2003-September 2010) one can obtain the higher policy limits from one's own insurer if one has a catastrophic impairment, but to sue a responsible party in court one needs to satisfy a verbal threshold defining serious and permanent impairment.

Ontario Regulation 34/10: Highlights for Psychologists Providing and Reviewing Clinical Assessment and Treatment

Note: this summary does not address other areas where psychologists provide services to victims of auto accidents in both no fault and medical legal contexts, for example regarding determination of catastrophic impairment or disability status. In addition, this summary is not intended as legal advice. It has been prepared prior to the implementation of Bill 34 and further clarification/correction may be required.

The new accident benefits schedule that commences September 1, 2010 continues to provide funding for goods and services to reduce impairments and restore functioning. Benefits for insureds with psychological impairments (which includes cognitive impairment) as well as assessments and treatments by psychologists are maintained.

While this guideline is focused on individual psychological assessment and treatment, group, family, and couple sessions also can be included as a separate component or an adjunct to an individual treatment plan. Such available additional services should be borne in mind when attempting to return an individual as much as possible to their pre-MVA functional status.

There are significant changes from previous SABS including the benefit levels and new process for application and insurer review of assessment and treatment plans.

BENEFIT LEVELS:

The standard level of accident benefits for accidents on or after September 1, 2010, has been reduced from \$100,000 to \$50,000. In addition, costs of all assessments conducted on behalf of the insured person are now included in the \$50,000. In contrast, for accidents before September 1, 2010 assessment costs are outside and additional to the \$100,000 benefit limit making the actual reduction in funds available for assessment and treatment even greater. The total value of assessments on behalf of the Insured under the prior SABS was not capped.

The new regulation also introduces a greater focus on optional benefits. These are intended to allow the individual to determine if they wish to pay additional premiums to increase their benefit level. It will be important for the psychologist to inquire if the person has purchased optional coverage (particularly optional \$100,000 or \$1,100,000 for med/rehab) in order to be aware of the funds potentially available for medical and rehabilitation services.

The regulation continues the previous higher level of benefits for accident victims with catastrophic impairments with only very minor change to the catastrophic impairment criteria. However, it also introduces a new lower cap when the accident victim has a "minor injury". The regulation includes: a minor injury definition; minor injury cap of \$3500; and a minor injury treatment guideline.

MINOR INJURY DEFINITION

"Minor injury" as defined in the regulation is, "one or more of a sprain, strain, whiplash associated disorder, contusion, abrasion, laceration or subluxation and includes any clinically associated sequelae to such an injury". These terms are further defined in the regulation,

"sprain" means an injury to one or more tendons or ligaments or to one or more of each, including a partial but not a complete tear;

"strain" means an injury to one or more muscles, including a partial but not a complete tear;

"subluxation" means a partial but not a complete dislocation of a joint;

"whiplash associated disorder" means a whiplash injury that,

(a) does not exhibit objective, demonstrable, definable and clinically relevant neurological signs, and

*(b) does not exhibit a fracture in or dislocation of the spine;
"whiplash injury" means an injury that occurs to a person's neck following a sudden acceleration-deceleration force.*

MINOR INJURY BENEFITS

The regulation provides a “cap” on funding for treatment of an accident victim whose injury is “predominantly a minor injury”. The requirements for exceptionality to this cap are also defined.

18. (1) The sum of the medical and rehabilitation benefits payable in respect of an insured person who sustains an impairment that is predominantly a minor injury shall not exceed \$3,500 for any one accident, less the sum of all amounts paid in respect of the insured person in accordance with the Minor Injury Guideline.

(2) Despite subsection (1), the \$3,500 limit in that subsection does not apply to an insured person if his or her health practitioner determines and provides compelling evidence that the insured person has a pre-existing medical condition that will prevent the insured person from achieving maximal recovery from the minor injury if the insured person is subject to the \$3,500 limit or is limited to the goods and services authorized under the Minor Injury Guideline.

MINOR INJURY GUIDELINE (MIG)

Psychological impairments are not classified as “minor injuries”

A new and specific definition of “minor injuries” is introduced with the SABS in September 2010. Minor injuries are defined in the SABS as “a sprain, strain, whiplash associated disorder, contusion, abrasion, laceration or subluxation and any clinically associated sequelae”. All other types of injuries and conditions, including psychological injuries also occur on a spectrum from mild/minor to severe; however, this does not mean that they would be considered “minor” injuries, within the context of the current regulations. Psychological impairments are not included in this definition of “minor injuries”.

Description of the MIG

The regulation describes the requirements of the MIG and the process for initiating treatment for the person with a minor injury. For appropriate patients, the health professional completes the treatment confirmation form (OCF 23) and may begin treatment without requirement of prior application or approval from the insurer. The regulations state:

40. (1) This section applies to a person if,

- (a) the person sustains, as a result of an accident, a minor injury to which the Minor Injury Guideline applies; and*
- (b) the person submits or intends to submit an application under section 32 for medical or rehabilitation benefits.*

(2) The person shall submit, within the time specified in the Minor Injury Guideline, a treatment confirmation form that satisfies the following requirements:

- 1. The treatment confirmation form must be prepared and signed by a health practitioner,
 - i. who is authorized by law to treat the impairment that is the subject of the form,*
 - ii. who is authorized under the Minor Injury Guideline to complete the treatment confirmation form, and*
 - iii. who will be the health practitioner responsible for providing the goods and services described in the treatment confirmation form.**
- 2. The treatment confirmation form must contain details concerning the impairment and specify the provisions of the Minor Injury Guideline that apply.*
- 3. The treatment confirmation form must be signed by the person claiming benefits, unless the insurer waives this requirement...*

It is noted that the minor injury definition is intended to include the most common minor physical injuries. It is anticipated that most accident victims who have these common physical injuries will receive treatment within the MIG. The goods and services within the MIG focus on the assessment and treatment of these physical impairments. Similarly, the health practitioners who may initiate the MIG and complete

the treatment confirmation form are those who are authorized to treat these conditions and provide these interventions. These include: chiropractor, dentist, nurse practitioner, occupational therapist, physician, physiotherapist.

Psychological Interventions in the MIG

Psychological impairments/disorders are not classified as minor injuries and psychologists are not included as practitioners with responsibility for initiation of treatment within the MIG. However, there may be some clinical situations in which it would be appropriate for a psychologist to provide some psychological intervention to a patient being treated within the MIG as one of the services available under the “supplementary goods and services”. The MIG includes up to \$400 in funding for supplementary goods and services. One purpose of this funding is to address barriers and support restoration of functioning.

Supplementary goods and services during the treatment phase

The section regarding Supplementary goods and services during the treatment phase in the MIG states:

Additional funds are available to provide supplementary goods and additional services to support restoration of functioning and address barriers to recovery. The supplementary goods and services may include but are not limited to:

- *Treatment services for the additional minor injuries arising from the same accident.*
- *Goods required for self-directed exercise and/or pain management such as, but not limited to: theraband; gym ball; hot/cold packs; Obus Forme back support; lumbar roll; etc.*
- *Assistive devices required to maintain/return to work/school/home or personal activity such as but not limited to: head set; trolley; braces.*
- *Supportive interventions such as advice/education to deal with accident-related psycho-social issues, such as but not limited to: distress; difficulties coping with the effects of his/her injury; driving problem/stress.*

The health practitioner, a regulated health professional or an appropriate health care provider may provide the supplementary goods and/or services that are deemed necessary, up to a maximum cost of \$400.00, without approval of the insurer

In some situations, this provision of the MIG will be used by MIG treatment providers to work with psychologists to provide psychological services to the patient who is being treated within the MIG, e.g. to assist with coping skills, distress, etc. Some patients, for example, those who are presenting with initial distress or cognitive impairment post-MVA, may benefit from the limited supportive interventions such as education and advice that can be provided within the \$400 allowed for these supplementary services. In other instances, where there appears to be a psychological impairment/disorder, it will be more appropriate to refer the patient to determine if psychological assessment and treatment outside of the MIG is required.

In this way, psychologists may be called on to provide a basic intervention within the MIG for those recently injured. For example, this could be used to encourage patients to keep moving, or to give them some suggestions for managing their emotions and tension so that they can benefit maximally from the treatments being provided by the primary MIG practitioners. Psychologists may develop consultation relationships with physical medicine treatment clinics in which they can provide brief intervention and consultation, and determine which patients may be in need of psychological services outside the MIG.

Anxiety Disorders and Brain Injury are not “Sequelae of Minor Injuries”

As discussed elsewhere in this document, the causes and development of psychological conditions, such as Acute Stress Disorder, Post-Traumatic Stress Disorder, or a Specific Phobia for driving/travel, or brain injuries and resulting cognitive impairments are independent of physical injuries that may be sustained in an accident. The research and resulting diagnostic criteria for ASD, PTSD, and specific phobic behaviour

following a traumatic event are clear that the mechanism by which these conditions develop is an entirely internal, subjective, cognitive-affective process for the injured person that is separate from any other actions that may be occurring at the time, including any physical injuries that may be occurring (American Psychiatric Association, 2000). As a result, this kind of anxiety disorder injury often does not correspond to the severity of physical injuries sustained, damages incurred, other losses, or the dynamics of the event. It is also clear that brain injury can occur completely separately from any sprains or strains that may occur, resulting in significant impairments in multiple domains.

As a result, it must be concluded that ASD, PTSD, Specific driving/ travel phobia, and associated conditions (e.g. agoraphobia or generalized anxiety that may result from PTSD), as well as brain injuries and resulting impairments are independent conditions and not “sequelae” of physical injuries, whether the physical injuries are or are not “minor”. In addition, the psychological impairments themselves are not “minor injuries” both as defined in the SABS and given the reality or their clinical impact and the more extensive and variable treatment needs of patients with these impairments. Therefore, while some psychological services can be administered within the MIG, it would be inappropriate to consider the kind of psychological conditions and disorders we have reviewed within this document as being similar to the “minor” physical injuries that are addressed in the MIG, minor injury definition, and by extension, treatable within the \$3500 cap.

Mood and Chronic Pain Disorders are not “Minor Injuries”

Impairments of mood/depressive conditions, psychological chronic pain disorders, and the recognition of persisting impairments due to brain injury often occur later, when the patient has poor recovery from their physical injuries and is unable to resume pre-accident functioning and/or is coping with continuing, debilitating pain. These psychological conditions become a predominant focus of the patient’s treatment and rehabilitation independent of the severity of their other physical injuries. They are not “minor injuries” either in terms of the SABS definition or in terms of their clinical severity and extent and variability of treatment required. When a patient presents with impaired mood, a psychological chronic pain disorder, or cognitive/affective/behavioural dysregulation, referral to a psychologist to determine if psychological assessment and treatment is required is indicated.

Current research is clear in demonstrating the central importance of multidisciplinary treatment that involves psychological interventions in treating patients with chronic pain disorders, improving functioning, reducing and preventing disability, and off-setting the costs of disability due to chronic pain. We therefore recommend that psychologists continue to treat patients with chronic pain within multidisciplinary teams, whether in integrated programs in a single facility, or in “virtual teams” through coordination with care providers in different facilities.

APPLICATION AND INSURER REVIEW OF ASSESSMENT AND TREATMENT PLANS

The process and requirements for insurer review of applications for assessments and treatment plans have undergone significant change. In addition, all assessments, whether completed on behalf of the accident victim or the insurer, are subject to a \$2000 cap.

Prior approval of most psychological assessments and treatment continues to be required. The regulations state,

38 (2) An insurer is not liable to pay an expense in respect of a medical or rehabilitation benefit or an assessment or examination that was incurred before the insured person submits a treatment and assessment plan that satisfies the requirements of subsection (3)

The separate form previously used for application for assessments (OCF-22) has been retired. All proposals for goods and services, whether assessment or treatment are now submitted on a single form, the OCF-18. It is expected that use of a single form will foster applications that combine simultaneous assessment and treatment, for example, crisis intervention during initial assessment, or specific assessments such as vocational aptitude, interest or cognitive testing during treatment. However,

including assessments in the overall provisions for medical and rehabilitation goods and services, as well as other changes to the regulations alters significantly the requirements for psychologists proposing and insurers and psychologists reviewing assessment and treatment plans.

IMPLICATIONS FOR PRACTICE OF BOTH TREATING PRACTITIONERS AND IE REVIEWERS

- The application for assessment or treatment for accidents after September 1, 2010 must include a statement:
 - (A) *that the insured person's impairment is not predominantly a minor injury, (note to see discussion of minor injury definition above) or*
 - (B) *that the insured person's impairment is predominantly a minor injury but, based on compelling evidence provided by the health practitioner, the insured person does not come within the Minor Injury Guideline because the insured person has a pre-existing medical condition that will prevent the insured person from achieving maximal recovery from the minor injury if the insured person is subject to the \$3,500 limit or is limited to the goods and services authorized under the Minor Injury Guideline,*
- The insurer is not obligated to consider an application for assessment or treatment during the time period that a person is receiving treatment in the MIG, even if the application is for treatment of an impairment that is not predominantly a minor injury or is for non-MIG goods or services.
 - It will be important for psychologists who receive referrals for assessment and treatment to determine if the patient is presently receiving treatment in the MIG.
 - The insurer is obligated to consider applications for services for after the period of the MIG.
- All medical and rehabilitation goods and services, including assessments, must be reasonable and necessary (previously assessments were required to be reasonably required and reasonable);
- The application for assessment must utilize the fields on the OCF-18 to provide the rationale for the assessment and the description of the proposed goods and services, in addition some fields previously on the OCF-22 are no longer included;
- Insurers have 10 business days to review all applications, (previously insurers were required to respond to assessment proposals within three business days);
- Assessments are no longer “deemed approved” if the insurer does not respond within the time frame. The insurer is obligated only to pay for goods and services provided from the 11th day until they provide notice that they are not approving the proposal.
- The patient must sign the application whether it is for assessment or treatment unless the signature is waived by the insurer (previously the patient’s signature on the assessment application was optional);
- Assessments conducted on behalf of the insured person are capped at \$2000
- Insurers may, but are not required, to obtain an insurer examination (IE) if they do not approve a proposal and this may be either “paper review” or an in-person examination (previously insurers were required to obtain an IE if they did not approve and assessment or treatment plan);
- If the insurer does not approve a proposal for assessment or treatment, the insurer is to cite a medical or other rationale for the denial.
- The time frame requirements for initiation, completion of the examination, and provision of the IE report to the insurer have been removed;
- IEs are limited to a cap of \$2000 per assessment.
- Reports
 - The context for clinical psychological assessments of MVA survivors, whether by the treating psychologist or the IE reviewer, continues to shape the communication requirements for the reports that are produced. The reports must provide information in language that is accessible to multiple users. The intended readers include the patient, his/ her treating health professionals, insurer, and legal representative.
 - Given that these assessments have implications for patient entitlements and insurer obligations to pay for services, the reports must provide sufficient information to meet the needs of all parties. Reports address the nature of the impairments that have resulted from the accident, resulting functional limitations, and the rationale for any proposed treatment.
- Rebuttal examinations

- The funding for rebuttals is no longer included in SABS. Rebuttals had provided the insured person an option to respond to IE determinations. At times, rebuttal opinions resulted in a reversal of an insurer's decision to deny benefits. In other instances, the rebuttal report was used in mediation or arbitration. While the funding for these reviews of insurer denial is no longer provided, psychologists may want to continue to provide these reviews for their patients. This information may be critical to a patient for further dispute resolution.

CLAIMING BENEFITS

Each accident benefit may be claimed if the insured person meets the appropriate test or threshold. There are a variety of tests for income replacement, caregiver benefits, etc. For access to medical and rehabilitation benefits, such as psychological treatment, there are two important principles. Firstly, medical and rehabilitation services that may be claimed are outlined in sections 15 and 16 of the SABS and are quite broad. Secondly, assessments and the claim for goods and services, such as treatment/rehabilitation must meet the "reasonable and necessary" test; this means that assessments and treatments proposed by health providers must be considered both reasonable and necessary in order for the insurer to be required to pay the cost of these services. There are numerous arbitration decisions attempting to define what this means. Careful reading of the regulations and arbitration decisions reveals that goods and services play a wide variety of roles, including: reducing or eliminating impairments; improving or maintaining function in the family, community, school, and workplace. For psychology, it is critical to understand that although functional restoration and integration of compensatory strategies are fundamental to treatment/rehabilitation, reducing pain and suffering is also a legitimate goal of these interventions. This includes reduction of impairments that have affected parenting skills and family functioning, resulting in additional needs for others affected by the sequelae of the MVA.

CLAIMING BENEFITS FOR FAMILY MEMBERS

We also note that treating psychologists should be aware that claims for Accident Benefits can be opened by family members of a crash survivor. Family members are also considered to be named insureds to be returned to pre-accident status and are covered under the same policy as the injured person. In this way, children or partners who have been affected by the change in a family member as a result of an accident injury may also receive treatment and benefits; this can be an important area for psychologists to assess, especially in determining potential effects on parenting and family functioning. It may be appropriate to open a separate claim for services for the affected family member, so that separate or conjoint assessment and treatment may occur.

Psychologists doing treatment in this area must be aware of the potential for effects on other family members when an auto accident survivor's functioning changes, and how to ensure that these effects on others are mitigated by helping the family to access appropriate benefits. Patten et al (2009) report on treatment research results indicating that parental depression is associated with psychiatric symptomatology and disordered behaviour in children, and that treatment for the depressed parent and often consultation for the affected child is required in such situations.

Group, family, and couple sessions also can be included as a separate adjunct to an individual treatment plan; such available additional services should be borne in mind when attempting to return an individual as much as possible to their pre-MVA functional status. We advise all psychologists to bear this in mind when assessing individuals who have been injured in MVAs; there may be children and other family member who are also suffering, but do not realize that they have access to services, as well. Interventions in such cases can be especially helpful to returning children and other family members to improved functioning, even if the injured person remains impaired.

PAYMENT FOR ASSESSMENT AND TREATMENT UNDER THE SABS

Payment for assessment and treatment of MVA injuries is provided within a system of no-fault accident benefits under the Statutory Accident Benefits Schedule (SABS). The contract of insurance is between the

insurer and the insured person. However, for practical purposes, most often services are billed directly to the insurer and paid by the insurer to the provider.

The SABS provide a system of checks and balances to provide payment for injured accident victims' access to assessments and treatments that are considered to be reasonable and necessary. Within this system of accident benefits, highly specified procedures and timelines are outlined for: applications for approval of assessment or treatment to be completed by the psychologist, and review of the application by the insurer. With rare exceptions, the psychologist must apply to the insurer for prior approval for all assessments and treatment. The insurer may, but is not required, to refer applications that they deny to an IE.

Treatment and rehabilitation are aimed at reducing MVA-related impairments and returning function as closely as possible to pre-accident levels; this may include treating a pre-existing condition that has been exacerbated by the MVA, or is creating a barrier to other treatments and rehabilitation. Treatment of pre-existing conditions that are unaffected by the MVA would be considered more appropriate for treatment under a payment system other than automobile insurance, or referral to other community resources.

Under the 2010 SABS and the current new rules of evidence, assessment reports for treatment are meant to focus on the clinical needs of the patient, rather than to address legal questions and/or provide a legal report; this would require a different kind of assessment. The purpose of clinical treatment/rehabilitation assessments as presently understood within the SABS is to inform treatment. In this way, the initial assessment for treatment is meant to gather enough information to inform the first stage of the psychological rehabilitation process. This kind of assessment relies on the knowledge that it will continue into the individual's treatment, because it is an iterative process, in which the patient is actually assessed over time, as treatment and rehabilitation progress. More intimate knowledge of the patient is gathered during the treatment process. This kind of more detailed assessment includes such things as: the patient's demonstrated preferences, response to treatment interventions, and further assessments/examinations. This kind of assessment for treatment is, by nature, a participatory and dynamic assessment, with the patient's involvement. This is different from the kind of assessment and report that is required to answer specific legal questions at a particular moment in time.

Assessments and Examinations under the SABS

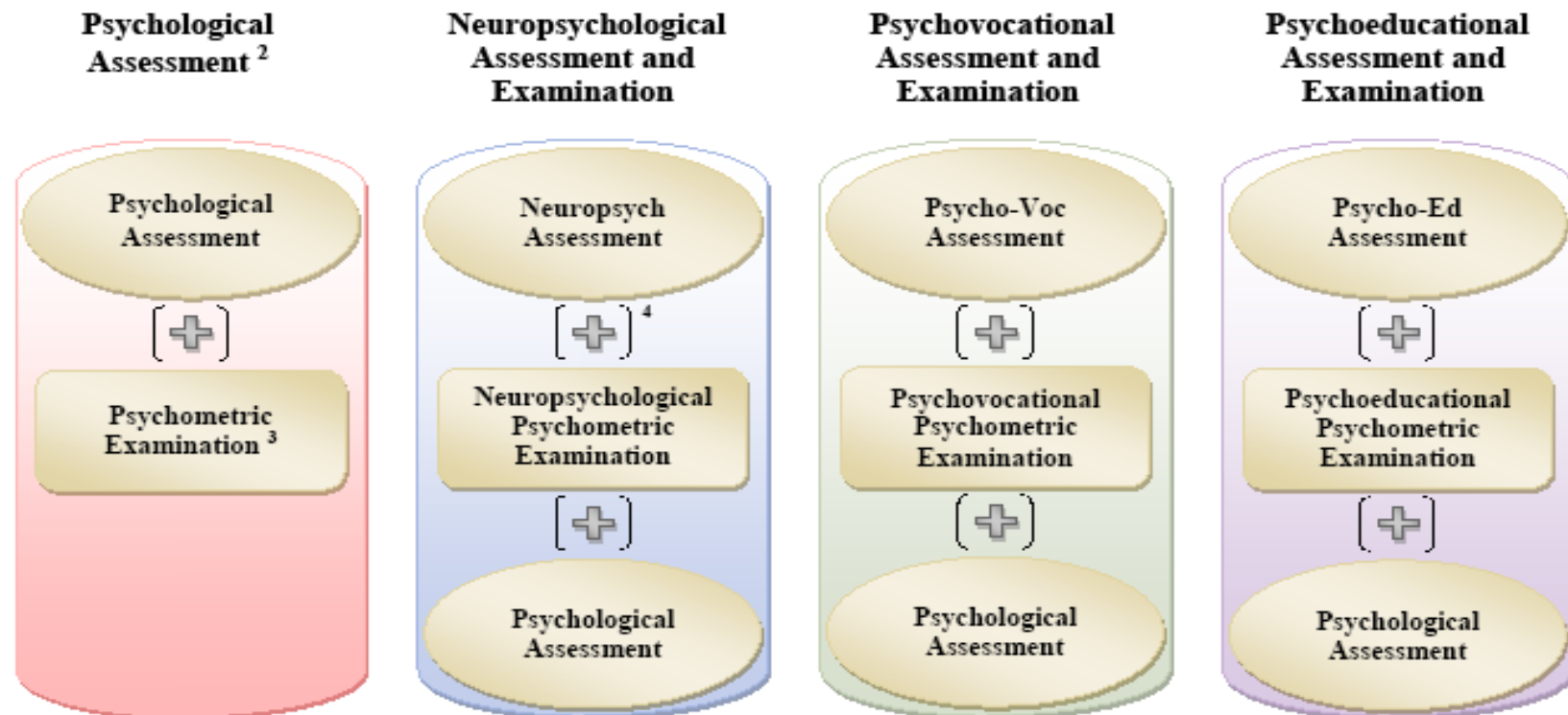
“ASSESSMENTS” AND “EXAMINATIONS”

The SABS indicates payment for assessments and examinations. In the Handbook and Guidelines, we address “assessments” and “examinations” which are an integral part of treatment/rehabilitation. We define “assessments” as a process that results in the formulation and communication of a diagnosis to guide treatment. Assessments involve direct clinical interview(s), analysis, preparation of a report, and feedback to the patient. Additional supportive components to this might be review of external sources of information (such as collateral interviews, completion of self-report inventories, and review of documents). On the other hand, we define “examinations” as any testing required to obtain data that will be incorporated into the assessment. A psychologist could conduct a brief diagnostic assessment consisting of only direct interview, analysis, report, and feedback to the client under some circumstances; however, even very extensive testing could not alone be considered a full assessment. Therefore, we have distinguished the testing as a separate “examination” that supports the “assessment”. Assessments result in a full report that integrates findings from multiple sources and is used for feedback to the patient; examinations result in data that requires analysis and interpretation for inclusion in the full assessment report and is not used by itself for feedback to the patient.

MODEL OF ASSESSMENTS AND EXAMINATIONS (TESTING)

The diagram below, Psychological Assessments and Examinations in Treatment/Rehabilitation, illustrates our understanding of some of the various patterns of assessments and examinations that may be required as part of the treatment/rehabilitation of individual patients.

PSYCHOLOGICAL ASSESSMENTS AND EXAMINATIONS IN TREATMENT/REHABILITATION¹



¹ Assessment is an iterative process, performed to guide treatment/rehabilitation. The diagnostic formulation evolves continuously through ongoing evaluation, monitoring of the patient's response to treatment. Further formal assessments and examinations may be required to address issues identified in the initial assessment and/or respond to emergent issues during treatment.

² Psychological Assessment includes clinical, health and rehabilitation.

³ Psychometric Examinations (testing) are diagnostic procedures which may be required to provide additional data to be used in conjunction with an assessment.

⁴ Cases with more complex presentation may require multiple assessments and concurrent psychometric examination (testing) on the same OCF-18. The proposal is expected to provide the rationale for the assessments and examination required.

Psychological Pre-Assessment Guideline

INDICATORS TO COMPLETE AN INTAKE SCREENING TO PROPOSE A PSYCHOLOGICAL ASSESSMENT

Reports of psychological symptoms or functional limitations that reasonably suggest that a psychological impairment exists that may be the result of an MVA injury or that psychological factors may be interfering with the patient's ability to respond to treatments for physical injuries are indicators to complete an intake screening.

BRIEF CLINICAL INTERVIEW/INTAKE SCREENING FOR PROPOSING PSYCHOLOGICAL ASSESSMENTS

In order for the insurer to be obligated to pay for an assessment, health professionals must apply (with rare exceptions) for prior approval to proceed with assessments by completing an OCF- 18 Application for Approval of Treatment and Assessment with description of the present symptoms, rationale, and details of the proposed assessment. The exceptions to the requirement of prior approval are included on the OCF- 18 and are described in the SABS.

The insurer must respond to the application for approval of the assessment within 10 business days or the assessment services may be provided until the insurer decision is provided. This can create some ambiguity regarding whether to proceed with an assessment if the insurer does not respond within the time lines.

The OCF-18 should be completed by a psychologist. The psychologist conducts a brief clinical interview/intake screening, either over the phone or in person, and psychological tests/screening measures may be included. The patient must sign the OCF-18 application providing informed consent; we therefore suggest that conducting the intake screening/interview in person is the expedient choice. Because the OCF-18 requires complaints/provisional diagnoses, decisions regarding patient need for different services, and assurance that the patient is truly providing informed consent to the assessment, this clinical screening interview should be conducted by a psychologist, rather than another health professional, an unregulated provider, or a support person.

We envision that assessment/examination proposals will continue to be complaint-based and limited to preliminary information. It is only reasonable to expect that many questions will remain unanswered until after the assessment/examinations are completed. Similarly, review of the health history and file are assessment components and generally are not completed as part of the proposal process.

We are obligated to certify that our assessment proposals are reasonable and necessary. Therefore the psychologist completing and signing the application must obtain sufficient information from the patient to confirm:

- The indicators for each type of proposed assessment/examination are satisfied and consistent with the criteria in the relevant assessment guideline tables;
- The proposed assessments/examinations are reasonable and necessary and consistent with the time frames in the relevant guideline tables;
- The patient has provided informed consent for the proposed assessment, for communication with the insurer, and for the possible insurer examination.
- Assessments/examinations proposed for treatment/rehabilitation will focus on gathering information to diagnose patients' conditions and guide their treatment. The assessing psychologist may use the information directly in providing treatment. Alternatively, assessments/examinations may be conducted as consultations to other treatment providers.
- A sufficiently/appropriately qualified practitioner is available (qualifications include language considerations, such that assessment should be provided when possible by a psychologist who is able to deliver the service without the need for a translator).

We expect that psychologists completing insurer examination reviews of these proposals for psychological assessments/examinations would be referring to these same criteria.

FEE FOR COMPLETION OF THE OCF-18

The Financial Services Commission of Ontario, Superintendent's Guideline No. 06/10, Professional Services Guideline (PSG), July 2010 states:

Forms

The maximum fees payable for the listed forms include all examinations, assessments and expenses related to professional services (as referred to below) that are involved in such examinations and assessments, and all other activities, tasks and expenses involved in the completion and submission of the forms, whether they are made through the Health Claims for Auto Insurance (HCAI) system or otherwise. Automobile insurers are not liable to pay for any expenses related to the listed forms that exceed the maximum fees set out in the Appendix.

The July 2010 PSG also indicated the fee for the OCF-18 is \$200 as of September 1, 2010. We understand from the PSG that the \$200 fee includes the costs for collecting the information required to complete the OCF-18.

INDICATORS FOR CLINICAL/HEALTH/REHABILITATION PSYCHOLOGICAL ASSESSMENTS

Consistent with accepted community and professional standards a Clinical/Health/Rehabilitation Psychological Assessment is reasonably required in the following circumstances:

- A claim has been made for the MVA to which the impairments are attributed; and
- The patient consents to the proposed assessment and the necessary communication with treating health professionals and the insurer; and
- One or more of the following are suspected/reported to be associated with an MVA:
 - Possible psychological impairment; or
 - Reported symptoms of psychological distress or role impairment; or
 - Psychological factors affecting the patient's response to other treatments for MVA-related impairments, or
 - Possible interference in the patient/claimant/client's usual home, school, or work life, due to psychological impairments.
 - Psychological symptoms causing discomfort/distress, or impairment (e.g. driving anxiety affecting one's ability to travel comfortably, or rumination affecting one's usual cognition and ability to sleep).
- Assessments/examinations proposed for treatment/rehabilitation will focus on gathering information to diagnose patients' conditions and guide their treatment. The assessing psychologist may use the information directly in providing treatment. Alternatively, assessments/examinations may be conducted as consultations to other treatment providers.

INDICATORS FOR SPECIFIC SPECIALIZED PSYCHOLOGICAL ASSESSMENTS

In addition to the clinical/health/rehabilitation psychological assessment, specific neuropsychological, psychoeducational, and psychovocational assessments may be reasonably required. These specific specialized psychological assessments are diagnostic, descriptive, and prescriptive. They are reasonably required to address diagnostic and related questions and provide information for treatment/rehabilitation planning or application for other benefits.

In these cases, psychologists are integral in helping the client to understand his/her diagnoses and the implications for functional capacity, as well as to adjust to their losses and go forward with their lives in this reality. Rehabilitation for the patient, and education and support for patients and families that includes specific, specialized psychological assessment services has demonstrated clinical utility and effectiveness in improving outcomes, reducing the economic burden associated with injuries, and re-

integrating patients into their homes and communities. Comprehensive assessments ensure that subtle strengths and impairments are identified so that treatment and rehabilitation planning/goals can be developed with appropriate information regarding the individual's current capabilities. Specific, specialized psychological assessments provide objective documentation of cognitive and motor complaints and are useful for planning treatment and rehabilitation, as well as educational and vocational integration. For patients with brain injuries, neuropsychological assessment and rehabilitation is often essential in their treatment and rehabilitation.

Neuropsychological, psychovocational, and psychoeducational assessments also provide detailed information to inform other health professionals and ensure effective rehabilitation. Results can be used to design an appropriate academic, vocational, or life-skills rehabilitation plan. Cognitive rehabilitation enables patients and their families to understand the impact of the injuries and to develop compensatory strategies to regain function that is as normal as possible. Psychological education and therapy with the affected families is often critical to the rehabilitation process.

The specific specialized assessments described in these Guidelines are indicated and reasonably required in the following situations:

INDICATORS FOR PSYCHOVOCATIONAL ASSESSMENTS

Psychovocational assessments provide objective documentation of vocational interests and specific cognitive capabilities that are useful for planning treatment and developing rehabilitation goals, as well as with vocational re-integration. Vocational issues including apparent difficulty returning to or maintaining level of performance in former employment are identified.

Psychovocational assessments generally involve measures of general cognitive ability, affective stability, and occupational interest. In this way, an individual's relative cognitive strengths and weaknesses (e.g. basic academic skills, verbal and perceptual abilities, manual dexterity, etc.) are identified and matched with various occupations. Occupational interest testing allows the assessor to capture the individual's preferred activities. Together with clinical psychometrics, a thorough vocational history, interview, and observation, the information yielded can then be compared with particular occupational requirements, as classified for example by the NOC system. In this way, determinations can be made regarding an individual's suitability for particular types of employment.

Assessments of this type are indicated and reasonably required when complaints of difficulty on a current job are noted, when concerns regarding an individual's ability to return to a previous job have been identified, or when it is clear that an individual cannot return to previous employment and a new vocational plan must be developed. In such cases, aspects of psychoeducational assessment may also be indicated.

INDICATORS FOR PSYCHOEDUCATIONAL ASSESSMENTS

Psychoeducational assessments provide objective documentation of cognitive abilities and academic achievement; they are useful for planning treatment and rehabilitation, in addition to educational re-integration where indicated. Educational issues including possible effects of MVA-related impairments on educational performance are noted.

Such assessments are indicated and reasonably required when student difficulties maintaining appropriate levels of performance are noted, or when vocational assessment indicates that a worker requires academic upgrading. Assessments of this kind identify issues relevant to the individual's ability to study, pay attention in an educational context, and participate in order to benefit from relevant education. Aptitude and achievement testing identifies areas of strengths and weaknesses so that comparison with current expectations in a particular educational context may be made. Together with a detailed educational history, clinical psychometrics, interview, and observation, conclusions may be drawn regarding the individual's suitability for participation in particular educational streams (e.g. elementary and high school

grades, college, university, technical school), and may point out areas of relative weakness or concern that merit further assessment (e.g. symptoms of mood disorder, anxiety or potential cognitive weaknesses indicating fuller clinical/rehabilitation and neuropsychological assessment).

INDICATORS FOR NEUROPSYCHOLOGICAL ASSESSMENTS

Neuropsychological testing is a means of evaluating brain functioning and predicting real world functional capacities by analyzing performance on a battery of neuropsychometric and psychological tests designed for this purpose. These tests assess how well different parts of the brain work and communicate with each other. They are sensitive to brain functioning and are used to determine the presence of brain dysfunction as well as to identify individual cognitive and behavioural strengths and weaknesses. These tests assess the patient's status in terms of attention, memory, language abilities, sensory-perceptual functioning, motor and psychomotor skills, and executive functions such as planning, reasoning, abstract thinking, and conceptual problem-solving. Neuropsychological assessment may also include assessment of academic skills and psychological status, to provide additional information on the individual's post-injury function. Also assessed are indicators of changes in behavioural and mood regulation, such as poor inhibitory control, regulation of affect and awareness, insight, and capacity to comprehend normal social contexts that may indicate brain injury and dysfunction. Such testing provides a detailed picture of a person's strengths and weaknesses in abilities involved in everyday life and work functioning. Test results also are critical for design of neuropsychological rehabilitation and cognitive retraining programs that may be necessary to compensate for or hasten recovery from injury-related cognitive deficits. They also help to identify neurobehavioural syndromes that would affect home, community or vocational integration, allowing for the development of appropriate rehabilitation programming.

Cognitive impairments have a number of etiologies that include brain injuries; however, cognitive deficits are also present as features of pain, depression, and anxiety (Boone, et al., 1995; Hammar, et al., 2003; Kizilbash, et al., 2002; Mataix-Cols, 2003). Clinical neuropsychological assessment provides an evaluation of the individual patient's cognitive and neurobehavioural abilities post-injury and relative estimates of premorbid skill and ability. Symptom validity testing is specific to a clinical neuropsychological assessment and is integral to validating cognitive complaints. Together with interview data, file review, and clinical observation, such testing can provide useful information regarding the validity of noted impairments, but can also be useful for identifying potential clinical syndromes, such as somatization and conversion, that can then be treated effectively by a clinical/ rehabilitation psychologist.

A neuropsychological assessment is particularly recommended for any case in which brain-based impairment in cognitive function or behaviour/affect is suspected. Typical referrals are made to diagnose, rule out, or provide differential diagnoses, as well as to describe the effect of the diagnosis on a person's cognitive, behavioural, and affective functioning. These include, but are not exclusive to the following conditions: traumatic brain injury, strokes, developmental learning disabilities, attention deficit disorders, psychiatric or neuropsychiatric disorders, seizure disorders, medical illness or treatments, effects of toxic chemicals or substance abuse, and dementing conditions (e.g. Alzheimer's Disease).

Neuropsychological assessment is also indicated when there are any post-injury cognitive symptoms, as these may occur in the absence of brain injury (e.g., with post-injury pain disorders, depression, anxiety disorders or post-traumatic stress disorder). Rehabilitation planning is optimized when there is neuropsychological assessment, to assist with differential diagnosis of brain injury and/or other factors in persisting post-injury symptoms.

Mild traumatic brain injury also can often produce impairments that cannot be measured or documented without neuropsychological assessment. Neuropsychological assessment is generally regarded as sensitive in determining cognitive, behavioural, and affective-based changes related to the trauma associated with brain injury. This is critical in diagnosing the nature or etiology of the deficits, as well as in developing some of the goals for an effective rehabilitation plan.

Neuropsychological assessments may: confirm or clarify a suspected or proposed diagnosis; provide a profile of strengths and weaknesses to guide rehabilitation; educate the patient and treatment professionals regarding the cause of various cognitive, behavioural, or affective symptoms; allow for realistic vocational planning, document changes in functioning since prior examinations, including effects of treatment; clarify which compensatory strategies would be most appropriate; clarify the need for additional referrals to other specialists, such as educational therapists, cognitive rehabilitation professionals, neurologists, psychiatrists, other psychologists, social workers, nurses, special education teachers, or vocational counselors. A neuropsychological assessment is particularly useful for tracking progress in rehabilitation after brain injury. Neuropsychological assessment can assist greatly in planning educational and vocational programs.

Lezak (1995) has articulated the conditions under which neuropsychological assessment is indicated, and the ways in which the information yielded from a full evaluation are beneficial:

“Any of four different purposes may prompt a neuropsychological examination: diagnosis; patient care—including questions about management and planning; treatment—for developing treatment programs and for evaluating their efficacy; and research. Each purpose calls for some differences in assessment strategies.

1. *Diagnosis.* Neuropsychological assessment can be useful in discrimination between psychiatric and neurological symptoms, in identifying a possible neurological disorder in a non-psychiatric patient, in helping to distinguish between different neurological conditions, and in providing behavioral data for localizing the site... of a lesion... there are conditions in which even the most sensitive laboratory studies may not be diagnostically enlightening, such as toxic encephalopathies, Alzheimer’s disease and related dementing processes, and mild head trauma. In these conditions the neuropsychological findings can be diagnostically crucial.
2. *Patient care and planning.* Whether or not diagnosis is an issue, many patients are referred for detailed information about their cognitive status and personality characteristics—often with questions about their adjustment to their disabilities—so that they and the people responsible for their well-being may know how the neurological condition has affected their behaviour. At the very least, the neuropsychologist has a responsibility to describe the patient as fully as necessary for intelligent understanding and care... Rational planning usually depends on an understanding of patients’ capabilities and limitations, the kinds of psychological changes they are undergoing, and the impact of these changes on their experiences of themselves and on their behavior... Neuropsychological data are likely to provide the most sensitive indices of the extent to which medications enhance or compromise a patient’s mental efficiency.
3. *Rehabilitation and treatment evaluation.* In rehabilitation and retraining programs, treatment and care responsibilities are often shared by professionals from many disciplines... They need current appraisals of patients’ neuropsychological status so that they can adapt their programs and goals to their patients’ changing needs and capacities... Such analyses may also indicate whether a patient can benefit from psychotherapy, particular behavioral training techniques, and generally accepted counseling approaches.”
4. *Research.*

Similarly, the American Psychological Association (2003) has indicated that (c) “Referrals for clinical neuropsychological assessment include, but are not limited to the following: differential diagnoses between psychogenic and neurogenic syndromes; differential diagnoses between two or more suspected etiologies of cerebral dysfunction; evaluation of spared and impaired functions secondary to a cerebral cortical or subcortical event; establishment of a neurobehavioral baseline measures for monitoring progressive cerebral disease or recovery; comparison of pre- and post-pharmacologic, surgical, or behavioral interventions; and assessment of higher cortical functions for formulation of rehabilitation strategies”.

Thus, neuropsychological concerns indicating that assessment is reasonable and necessary include, but are not limited to: reports of cognitive and information processing impairments/deficits, post-concussion type symptoms, and any history suggestive of concussion/brain injury sequelae or neurobehavioural disorders. Post-injury pain conditions and injury-related psychological disorders (e.g., depression, PTSD) may also present with subtle, but clinically and functionally significant, cognitive impairments. These are best investigated through the in-depth, broad-ranging testing afforded by neuropsychological assessment. Neuropsychological assessments are not limited in relevance to patients with evidence of structural brain damage, but are also necessary to document impairments in patients with possible/ probable diagnosis of neuropsychological and neurobehavioural disorders, and are the tool of choice whenever documentation of cognitive difficulties and symptom validity testing are indicated.

A neuropsychological assessment is particularly recommended for any case in which brain-based impairment in cognitive function or behavior is suspected. Typical referrals are made to diagnose or rule out the following conditions, and to describe their impact on a person's cognitive functioning: traumatic brain injury; strokes; developmental learning disabilities; attention deficit disorders; psychiatric or neuropsychiatric disorders; seizure disorders; medical illness or treatments; effects of toxic chemicals or chronic substance abuse; dementing conditions (e.g., Alzheimer's Disease).

INDICATORS FOR COMBINATION SPECIALIZED ASSESSMENTS

Naturally, the multiple psychological and somatic symptoms common among MVA victims, as well as frequent medication side effects that are experienced can have cumulative and synergistic effects in creating impairments in cognitive functioning. In this context, more extensive cognitive testing is indicated, particularly when cognitive difficulties are viewed as primary rehabilitation barriers in the context of activities of daily living and/or work. In a work context, the greater that the individual's essential job tasks include significant cognitive demands, the greater the emphasis that should be placed upon evaluating the individual's cognitive limitations in relation to those cognitive demands.

In such cases where multiple specialized assessments in addition to a clinical/health/rehabilitation psychological assessment are reasonably required (e.g. traumatic brain injured adult with pain and PTSD who likely cannot return to work and may require re-education or retraining), it may be advantageous to propose combining assessments in order to provide more streamlined services. In such cases, the resulting clinical psychological/neuropsychological, neuropsychovocational, neuopsyoeducational assessments will include assessment intervention components and specialized tests from multiple specialized assessments in addition to the foundational clinical/health/rehabilitation assessment required for all psychological assessments.

OCF-18 APPLICATION FOR APPROVAL OF ASSESSMENT STEPS

Psychologists must now apply for approval to proceed with assessments by completing an OCF-18 Application for Approval of Treatment and Assessment. Essentially, the same information now is required for assessment and treatment plan proposals, except that diagnoses are considered to be provisional, based only on initial screening information for the assessment proposal.

The requirement to use the OCF-18 rather than the OCF-22 for the application to the insurer for prior approval of assessments does not alter the psychologist's fundamental responsibilities in this process. The psychologist must continue to: determine if an assessment is necessary; propose a reasonable assessment to diagnose the patient's impairments and prescribe treatment; and obtain informed consent for the proposed goods and services. However, there are changes to some of the procedural details to accomplishing these.

When the psychologist submits the OCF-18 to the insurer for approval of the assessment, the insurer must respond within 10 business days. If the insurer does not respond, services may be provided until the insurer denial is provided. The insurer is permitted to provide complete or partial approval providing

medical or other reasons, or the insurer may also refer to an IE for a second opinion on the reasonableness of the proposed assessment. Note that the new regulations no longer require an IE for the insurer to deny an application.

In some instances, a single OCF-18 will be used to propose simultaneous assessment and treatment. In fact, when simultaneous assessment and treatment is indicated from the same provider/facility, it is expected that these services would be proposed on a single OCF-18. However, for purposes of clarity, these Guidelines will address the creation of an OCF-18 for proposing assessment/examination as a separate process from an OCF-18 proposing treatment assuming that in many instances, an assessment will be required prior to proposing treatment.

Components of the OCF-18 to apply for approval of assessments/examinations

In utilizing the OCF-18, the psychologist must be prepared to address whether or not the impairment is not predominantly a “minor injury” or that the patient satisfies the requirements for exception from the MIG and the minor injury cap (See prior discussion regarding minor injury definition). Psychological impairments are not included in the definition of minor injuries. However, in some instances it may be appropriate to provide psychological intervention as supplementary goods and services up to \$400 to a patient with a minor injury. These services are to address barriers to recovery and facilitate restoration of function and may support the physical treatments a patient is receiving in the Minor Injury Guideline (MIG) for a minor injury. These situations are addressed in the MIG.

The conflict of interest declarations have been removed from the OCF-18 as the SABS no longer contain these sections. Note that the SABS has retained the conflict of interest section relating to insurer referrals. However in Part 4, the psychologist must provide a statement that the proposed services are reasonable and necessary:

I confirm that, to the best of my knowledge, the information in this Treatment and Assessment Plan is accurate, the Treatment and Assessment Plan has been reviewed with the applicant by the regulated health professional in Part 5, and the goods and services contemplated are reasonable and necessary for the treatment and rehabilitation of the applicant for the injuries identified in Part 6.

I understand that it is an offence under the Insurance Act to knowingly make a false or misleading statement or representation to an insurer under a contract of insurance. I further understand that it is an offence under the federal Criminal Code for anyone, by deceit, falsehood, or other dishonest act, to defraud or attempt to defraud an insurance company. This information will be used for processing payments of claims; identifying and analysing the nature, effects and costs of goods and services that are provided to automobile accident victims, by health care providers; and detecting and preventing fraud.

When completing Part 6 of the application, it is not expected that the psychologist will have full information regarding the patient’s “Injuries and Sequelae”. Diagnosis of impairments is most often a purpose of the assessment and therefore is often not known until the assessment is completed. It is noted that Part 6 of the OCF-18 includes “complaints” as well as injuries and sequelae, allowing the assessment proposal to be based on the patient’s complaints. There are several options for this. It is possible to include provisional/differential diagnoses that will be explored further during the assessment. If provisional diagnoses are indicated, the additional comments can be used to highlight that the diagnoses offered are provisional or “rule out”. The full range of ICD Codes is available to capture a range of complaints and problems that the patient may report that suggest the need for further assessment. (Commonly used ICD 10 codes for patients injured in MVAs will be posted to the OPA website.)

In Part 7, the psychologist is asked to indicate prior and concurrent conditions that may affect the patient’s response to treatment for their auto accident injuries. If these are known at the time of the assessment application, the information is to be provided. If not, it is possible to indicate “unknown” and

explore this area as part of the proposed assessment. Some information may be gleaned in the screening to propose the assessment.

In Part 8, the psychologist is asked to describe activity limitations, employment issues, and modified work opportunities. Again, these will be explored during the assessment and entered as “unknown” if applicable.

In Part 9, completion of the section on Plan Goals, Outcome evaluation methods, and barriers to recovery may also be premature at the time of applying for approval of the assessment. It may be that treatment plan goals, assessment, as well as evaluation methods, barriers to recovery, and concurrent treatment are only identified as a result of the assessment. If so, “not applicable” may be indicated. If provisional information is available, this may be provided and indicated that it will be explored further during the assessment. The statement regarding consistency with guidelines has been removed.

In Part 10, the patient must now sign the application for approval of assessment, unless this requirement is waived by the insurer. This is a change from the present practice on the OCF-22 where the patient’s signature is optional. It may require some practice changes for those psychologists who have been doing a telephone screening and obtaining verbal permission for submission of the OCF-22.

Since it is the psychologist’s responsibility to determine whether and what kind of assessment is indicated, and the patient must now sign the application, we must recommend that the psychologist do the intake screening interview and explain the form and costs to the patient him/herself in order to provide enough information for the patient to sign and provide informed consent. This brief interview by the psychologist can be documented on the OCF-22 to communicate with the adjuster and potential IE reviewer that the person who obtained the information required to complete the form and determine assessment needs was, in fact, qualified to do so.

Part 11 requires the listing of the health care providers who will provide the goods and services, their provider type, college registration number and hourly rate (if applicable).

Part 12 requires the listing of the proposed goods and services. When proposing assessments on the OCF-18, it is possible to “unbundle” the services and provide a line item for each type of assessment or examination. Alternatively, the assessment/examination can be proposed as a unit. For example, the GAP code HXXMR is used for “*health provider initiated examinations and reports*” (We will post further information and pick lists of CCI and GAP codes on the OPA website). A single line item for the assessment or examination provides ease of communication regarding the fee for the assessment/examination. However, we recommend that if a single line item is used for an assessment or examination as a whole, one should include information describing the components of the assessment in the “additional comments” section.

Multiple Assessments/Examinations

We recognize that in some situations it is not possible to address all of the areas of concern within the cap of \$2000 for an assessment or examination. This is particularly true when proposing specific specialized assessments, or when proceeding with general clinical assessments for children or adolescents, and those patients with polytrauma and multiple impairments in different areas.

The foundational assessment of psycho-emotional factors (clinical/health/rehabilitation assessment), can be proposed (with or without examination) on a single OCF-18. The same OCF-18 also may include some initial treatment sessions, and/or further assessments and examinations that appear to be required. For example, if additional detailed assessment of pain, substance abuse, or some other factor is indicated, these may be listed as separate assessments. These may be proposed simultaneously, sequentially, or with future treatment.

In addition, some patients will require multiple assessments and examinations due to the nature of their impairments/situations. These include but are not limited to patients with neuropsychological, psychovocational, or psychoeducational issues for treatment/rehabilitation planning.

These models are illustrated in the diagram of Psychological Assessments and Examinations in Treatment/Rehabilitation and the guideline tables.

It is the responsibility of the psychologist who is completing the assessment to determine which assessment components are necessary and the amount of time for each that is reasonable and necessary, given the circumstances.

Psychological Assessment Guidelines

BRIEF REVIEW OF LITERATURE AND IMPLICATIONS FOR PSYCHOLOGICAL ASSESSMENT/EXAMINATION

Clinically sound and cost-effective treatment requires adequate assessment. Undiagnosed impairments can affect a patient's ability to respond to other physical and rehabilitative treatment as well as psychological treatment, and they can increase costs by slowing progress in therapy and continuing medical usage. Efficient diagnosis ensures that impairments are identified, the proper treatment prescribed, and therapeutic effectiveness maximized. In this way, later costs can be offset and functional limitations reduced, so that the injured person can become more independent personally and financially.

As suggested by Dorfman, "[P]sychological evaluation and testing... can assist in establishing a valid diagnosis early in treatment, crystallize a focus for brief treatment, enhance quality by effectively matching clients to treatment approaches, and reduce the length of treatment by assessing openness and attitudes toward therapy" (Dorfman, 2000, p.36). Similarly, Kubiszyn, et al. suggest that psychological assessment has demonstrated validity and utility "for several clinical health care applications... [including] the a) description of clinical symptomatology and differential diagnosis; b) description and prediction of functional behavior; c) prediction of health outcomes; d) prediction of health care utilization; e) prediction of psychotherapy, forensic, and mental health outcomes; f) identification of patient/ claimant/ client characteristics that affect treatment; and g) use of psychological assessment as treatment in itself" (p. 120).

In fact, diagnostic tests performed by psychologists are state-of-the-art tools. Meta-analytic research on assessment validity indicates that many psychological tests detect pathology at a rate indistinguishable from those of medical tests. For example, psychological tests detect dementia, depression, or psychotic disorders just as accurately as medical tests such as pap smears, mammography, magnetic resonance imaging (MRI), and electrocardiograms detect medical pathology. Moreover, some psychological tests work just as well as medical tests to detect the same outcome. For instance, the ability to detect dementia is as good with neuropsychological tests as it is with MRI (Daw, 2001). Increasingly, physicians and other health care professionals turn to psychologists for their diagnostic capabilities. These diagnostic services detect functional impairment and assess the prognosis for improvement or deterioration in functioning. Psychologists apply these results and develop treatment and rehabilitative services.

The development and delivery of effective and efficient treatment depends upon accurate diagnosis of the psychological components of illness and injury. Assessments under auto insurance must be informative to a number of readers and reviewers including patients, psychologists, other health professionals, adjusters, lawyers, mediators, arbitrators and judges. Often patients requiring psychological assessment have multiple sources of impairment and distress, including pain, cognitive impairments, and functional limitations. In addition, pre-existing conditions and personal circumstances often contribute to already complicated presentation and treatment needs. Assessing and planning treatment needs requires a careful differential diagnosis in such situations.

With regard to diagnoses and impairments that may occur after an MVA, Schillaci et al (2009) state that “accurate differential diagnosis is essential in determining the appropriate treatment modality” (p. 44), and give specific suggestions regarding how to differentiate between PTSD and symptoms of other disorders, such as agoraphobia, specific phobias, and depression. With regard specifically to depression, Patten et al (2009) note that, “DSM-IV provides valuable sets of diagnostic criteria but the nosology is not intended to supplant clinical judgment. Successful treatment depends on an accurate diagnosis, but an accurate diagnosis does not provide a sufficient basis for clinical management. The diagnosis of MDD is always a provisional diagnosis... As such, working diagnoses may evolve over time. Nevertheless, an accurate diagnosis is the most important starting point for clinical management. The goals of assessment include: assessment of safety, establishment of rapport and a therapeutic alliance, assessment of comorbidity, patient education, and obtaining informed consent to proceed with treatment” (p.S10). Thus, caution and comprehensiveness are advised when attempting to make differential diagnoses and plan appropriate treatment for patients with multiple injuries, such as those injured in MVAs.

Feedback as an Essential Component of Assessment

We consider that any assessment done for treatment planning requires communication of the findings with the patient. We also consider that providing such feedback involves allowing the client to ask questions and seek clarification about the findings, and is not simply allowing the client to read the report before it is sent. Recent research in this area is consistent with the idea that such feedback of assessment results and direct engagement of the client in the process enhances the therapeutic process.

Poston and Hanson (2010) conducted a meta-analysis of studies employing therapeutic assessment practices, such as those recommended in this guideline. They noted that assessments conducted in this way share common features of “developing and maintaining empathic connections with clients; working collaboratively with clients to define individualized assessment goals, and; sharing and exploring assessment results with clients” Finn and Tonsager (1997), p. 378, quoted in Poston and Hanson, 2010). For their meta-analysis, Poston and Hanson (2010) defined psychological assessment as a therapeutic intervention as “the process of completing any formal psychological test/measure and receiving feedback on the results”, and therapeutic benefit as “any dependent variable designed to demonstrate potential client improvement or enhanced therapy process” (p.205). Using these criteria, and calculating effect sizes in an aggregate sample of N=1496, they found that 66% of clients who engaged in psychological assessment as a therapeutic intervention experienced results above those achieved by the control/comparison group. Positive results were found for a variety of therapeutic process and outcome variables. Findings were consistent and robust, and effect sizes obtained were similar to those found in other areas of general psychotherapy and specific intervention research that also tend to produce robust results (e.g. addiction counselling, and CBT for anxiety disorders). The strongest effects were found for process variables, which fits with the notion of assessment as contributing significantly to the actual therapeutic process, not just providing information (i.e. engaging in “a potentially relational experience rather than a sterile reductionistic practice” (p. 203).).

One interesting observation noted by the authors from the data prompted the following hypothesis: “whether studies included a no-treatment control (absolute efficacy) or a comparison (relative efficacy) group... did not explain observed variances. This is interesting, in part, because it suggests that assessment and testing as usual (e.g. an information-gathering approach) and/or testing without feedback may be as therapeutically inert – in terms of treatment processes and outcomes – as receiving no treatment at all” (p.210). The authors conclude based on their findings that “it is safe to say... that psychological assessment/ testing and feedback is, if done in a specific way, a mini treatment/ intervention in its own right... If tests are used collaboratively – and if they are accompanied by personalized, highly involving feedback – then clients and treatment appear to benefit greatly” (p.210).

In addition to providing a direct therapeutic benefit, performing a proper clinical diagnostic investigation also is an investment in a procedure that ensures that efficient, effective treatment is provided often

leading to reduced disability costs. It provides benefits to the client by meeting the need for appropriate treatment, it benefits the clinician by ensuring that treatment time can be targeted and efficient, and it provides a financial benefit to the system by ensuring that all impairments are captured and treated in the most efficient manner. It also provides benefit to all stakeholders as an accurate and comprehensive communication tool that can be used in avoiding disputes over benefits.

ASSESSMENT INTERVENTIONS

The most reliable and valid data for assessment include a combination of information involving, for example:

- the patient's self-report,
- collateral reports from teachers, family members, or other treating health professionals,
- clinical observation,
- psychometric data.

All interventions utilized to obtain this information are described within the language of the Canadian Classification of Interventions (CCI). We note that the description of the components of the assessment should be provided on the application, even if the psychologist chooses to use the GAP code to propose the entire assessment as a single block in the goods and services section of the form.

Specific assessment interventions and examinations are chosen according to patient needs, questions to be addressed, and the professional judgment of the psychologist. For example, different tools are needed to address questions of impairment due to post-traumatic anxiety than are needed to address questions of potential future employability. In the first case, clinical psychological interview and psychometric assessment may be reasonably required; where in the second, psycho-vocational interview and specific testing regarding abilities, aptitudes, and interests would be more appropriate. The choice of what to do and which particular tests to use is determined by the individual psychologist, according to the standards in that area of inquiry (e.g. clinical psychology regarding anxiety disorders and the effects of traumatic stressors in the first case, vocational psychology regarding the effects of disability on retraining and employability in the second).

It should be noted that under the SABS, psychologists are required to assess and identify impairments; there is no requirement for the constellation of impairments identified to meet diagnostic criteria for a clinical disorder. While there is nothing in the SABS that precludes anyone from using a full DSM multi-axial diagnosis system, all psychologists doing assessments under auto insurance must be aware that ICD-10-CA classification terminology and codes are required for related OCF forms, not DSM-IV diagnoses.

Use of the ICD-10 requires a shift in conceptualization of disorders to the level of treatable symptoms and impairments. While the DSM facilitates differentiation of levels of disorders affecting an individual's presentation (Axes I through V) that can aid in conceptualization, the ICD has a much broader orientation than the DSM and allows for diagnosis of disorders, symptoms, factors influencing health status, and problems that may be treatable while not rising to the level of a diagnosed clinical disorder. While many of the clinical conditions indicated in the ICD-10 have a parallel DSM diagnosis, there are also a number of problem areas and impairments that are described within the ICD-10 nomenclature as appropriate for treatment that are not contained within the DSM. Practices differ, and many clinicians may choose to include diagnoses using the DSM multi-axial system in their reports, as well as ICD-10 diagnoses; this is a personal choice based on clinician preference that may facilitate communication and conceptualization for some; however, use of the ICD-10 system is a requirement of practice in this area and must be included on all OCF-18s and in all reports.

Assessment interventions should be tailored to meet this requirement, including noting subscales (rather than only total scores) on some psychometric instruments, and assessing for specific impairments and

limitations in functioning, rather than assessing only for symptom presence and determining whether the total number of symptoms noted meets diagnostic criteria for a clinical disorder. This orientation is consistent with a focus on reducing impairments and restoring function in multiple domains, rather than a focus on symptoms and diagnosing clinical disorders. Psychologists conducting and reviewing assessments in this area of practice should be aware of this important difference in how to approach assessments and treatment, since it affects how assessments are conducted, which impairments are identified, which diagnoses are made, where to target treatment interventions, and how to measure results.

Note also that opinions and practices vary with regard to how appropriate standardized psychometric measures may be for some patients (e.g. those with English as a second language, or those whose cultural or educational background is inconsistent with the norms of particular tests). While some psychologists may prefer to administer tests in a non-standardized way (e.g. use a translator, or read and explain items to patients) and use the results qualitatively, others may choose to administer the tests normally, but include error bars around scores to capture the perceived acceptable ranges of variability in responses. Still others will prefer not to use psychometrics at all in such situations where they are not sure the results will be valid and reliable. Test users and readers of this Guide line are encouraged to consult the joint Standards for Educational and Psychological Testing (1999) from the American Psychological Association, National Council on Measurement in Education, and American Educational Research Association, as well as the International Test Commission (2000) International Guidelines for Test Use, and the manuals of each test considered when selecting and administering any psychological tests.

We are also aware of significant practice variability around usage of unregulated psychometrists and other assistants in the testing process. While the psychologist is responsible for diagnosing and communicating the diagnosis, psychometrists may be used to aid in the administration of some tests. Again, we refer the reader to current international guidelines and individual test manuals for determination regarding when this is an appropriate course of action.

With regard to billing auto insurers for time spent by psychometrists and other unregulated assistants who are working under the direction and supervision of the psychologist, the total amount billed should not exceed the amount that that could be expected to be charged by the psychologist to perform the same activity alone.

Assessment Considerations

In order for treatment to provide clinically and cost-effective outcomes, it must start with appropriate assessment. Recommendations in the assessment literature are that it is beneficial to include identification of factors with the potential to affect the nature, duration, and frequency of therapy, including: diagnosis and prognosis, duration of illness, social context, nature and complexity of treatment goals, techniques and treatment models employed, patient motivation for change, and therapist-patient fit (Freebury, Ennis, Rideout, & Wright, 1998). In addition, assessments should include evaluations of patient functioning in multiple domains and satisfaction with treatment as important outcomes for evaluating treatment efficacy and effectiveness.

Accordingly, current scientific evidence recommends comprehensive assessment of MVA survivors, due to the complexity of their physical and psychological injuries (Blanchard & Hickling, 2004). Such a comprehensive assessment provides clinical value and ensures that treatment can be more focused on specific impairments. Recent research also indicates that the number of diagnostic questions asked helps to enhance accurate diagnosis; greater diagnostic accuracy is achieved only by taking the time to ask more questions and obtain more information (Brammer, 2002). Investigative rigour and comprehensiveness ensure that impairments are identified so that they can be treated appropriately and do not become a drain on therapy and the system.

Clinical/Health/Rehabilitation Assessment

This is the foundational assessment upon which other assessments may build. With regard specifically to this kind of assessment after an MVA, Iezzi, Duckworth, and O'Donohue (2008) recommend that,

Because MVCs and associated sequelae proceed in a dynamic fashion, assessment tools should be selected to capture various features of the MVC experience. Assessment of physical and psychological symptoms needs to reflect the overall chronology of the MVC experience... A more thorough assessment of MVC sequelae also needs to measure important constructs and outcomes like loss of consciousness and cognitive functioning, actual injury severity and perception of injury severity, pain, quality of life domains, psychological distress, physical and psychological impairments and disability, and symptom exaggeration, malingering, and litigation stress. Finally, a comprehensive assessment protocol needs to appreciate the multivariate nature of the MVC experience. (p.549)

Special concerns in assessment of depression

Several factors can affect the presentation of the MVA survivor with overlapping symptoms and conditions. With regard to assessing depression, Duckworth (2008) notes the particular difficulty of distinguishing depressive symptoms from those occurring due to other causes after an MVA: "Although the DSM-IV-TR (APA, 2000) criteria for MDD appear straightforward, trying to establish these symptoms as due to MDD rather than consequent to some other MVC-related condition is not easy. For example, chronic pain or head injury... can result in decreased energy, concentration and memory impairment, sleep and appetite disturbances, and prominent feelings of worthlessness and helplessness, these symptom reports being indistinguishable from those that define MDD" (p.325). Secondly, in their guidelines on the assessment of depression, Patten et al. (2009) recommend that,

clinicians should evaluate suicide risk... ensure that patients are aware of locally available sources of help and patients should be advised to seek help if their situation deteriorates. Physical health, psychosocial status (including social and interpersonal relationships) and psychiatric comorbidity should also be assessed. Assessment of past response to treatment can provide valuable guidance for treatment decisions. Information from supplemental sources such as health records and knowledgeable informants is often a key component of assessment. (pS10)

These components are important in creating the differential diagnosis and ensuring optimal treatment planning for the depressed MVA survivor. They may be included in the initial assessment or occur over time, as assessment proceeds through the iterative process of blended assessment and treatment over serial OCF-18s.

Special concerns in assessment of post-traumatic stress

Given the rapidity of change in the scientific literature in this area, readers are especially encouraged to stay current on the assessment and treatment of post-traumatic stress, including both ASD and PTSD. With regard specifically to attempting a diagnosis of ASD, proposed changes to DSM criteria based on recent scientific advances are being considered in the current revision. When attempting to identify individuals at risk for developing PTSD, Bryant (2008) cautions that,

The reliable assessment of ASD is made difficult because of the rapidly changing nature of acute stress reactions. In contrast to the reasonably stable nature of most psychiatric diagnoses, including the diagnosis of chronic PTSD, the ASD diagnosis is susceptible to marked changes within the initial days and weeks after trauma exposure... It is very probable that the sooner one diagnoses ASD after trauma exposure, the more likely one will confuse a psychopathological response with a transient stress reaction... it is very likely that the DSM-IV prescription of

2 days after trauma exposure is too soon for accurate identification of people who will subsequently develop PTSD. (p.114-115)

As a result, we suggest that screening and monitoring of symptoms may be more appropriate in the early days and weeks of a patient's post-traumatic response. In keeping with this, O'Donnell et al (2008) suggest developing a stepped-care approach to diagnosing depression and post-traumatic stress. These authors recommend screening individuals at risk for PTSD and depression following a traumatic event and identifying those who appear to be at elevated risk. These individuals then can be monitored and re-assessed with a more comprehensive assessment approximately one month post-injury, and early interventions targeted for those whose symptoms are not resolving naturally.

Special considerations in assessment of interacting physical and psychological injuries

Patients seen by psychologists after MVAs tend to have complex presentations of multiple, overlapping physical and psychological injuries, such as pain, TBI, cognitive impairments, depression, and post-traumatic stress. In addition, physical health conditions, risks, and vulnerabilities can be exacerbated by the injuries sustained in the MVA (e.g. reduced activity results in increased weight, blood pressure, and glucose levels; increased stress results in increased smoking and blood pressure). This may create challenges for assessment and determination of appropriate treatment interventions for patients affected in so many spheres of functioning.

With this in mind, Duckworth (2008) suggests that, considering physical and psychological symptoms independently is not an effective approach to conceptualizing and managing such post-MVC symptoms. Physical and psychological symptoms interact and have an effect on the overall MVC clinical presentation. Physical injuries will result in psychological repercussions (e.g., depression and anxiety), and psychological repercussions (via increased physiological reactivity) can further exacerbate physical symptoms (e.g., increased muscular tension resulting in increased pain severity). The relation between physical and psychological symptoms also has an effect on an injured person's quality of life. The poorer the quality of life a person experiences as a result of physical and psychological symptoms, then the more likely the injured person will be disabled. This cascade of effects that are seen consequent to MVCs requires that researchers and treating clinicians embrace a model that recognizes and addresses the many interacting aspects of physical, psychological, interpersonal, occupational, and socio-recreational functioning that determine quality of life and well-being. (p.338-339)

We note that this perspective is consistent with the SABS restorative purposes to return the injured person to pre-MVA functioning in all of these spheres of functioning. Psychologists performing assessments for treatment planning should be aware of the physical and psychological injuries that may be interacting and producing impairments in their patients' functioning and quality of life. Part of an appropriate assessment therefore involves consideration of how different domains of functioning are affected by the combination of injuries the person has experienced, so that these can be addressed in the treatment proposal.

Special consideration when completing clinical/health/rehabilitation assessments of children and adolescents

When assessing children following a MVA, all of the above considerations apply; however, additional concerns specific to addressing this population must be addressed. In particular, the importance of doing a thorough interview with both the parent and the child has been demonstrated, with missed diagnoses occurring when only the child or only the parent is interviewed, especially regarding diagnosis of Posttraumatic Stress Disorder (Dyb et al. 2003, and Meiser-Stedman et al, 2008). It has been found that parents often underestimate the distress experienced by their child following a single-event motor vehicle trauma (Meiser-Stedman et al, 2007). It is also recommended that teachers be included in collateral

interviews, when possible. While the OPA guidelines have always recommended including collateral interviews as part of any assessment proposal, this is considered a requirement when assessing children and adolescents that should not be skipped. This highlights the importance of ensuring that the clinician has enough time with the child/adolescent and the parent, as well as teachers or other relevant caregivers, when conducting assessments.

Table I: Guideline for Clinical/Health/Rehabilitation Psychological Assessment

| | |
|---|---------------------------------------|
| Indicators for Assessment: Assessment is reasonable and necessary when the brief psychological interview/intake screen confirms that: | |
| <ul style="list-style-type: none"> • A claim has been made for the MVA to which the impairments are attributed; <u>and</u> • The patient consents to the proposed assessment and necessary communications; <u>and</u> • One or more of the following are suspected/reported associated with an MVA: <ul style="list-style-type: none"> ○ Possible psychological impairment; or ○ Reported symptoms of psychological distress or role impairment; or ○ Psychological factors affecting the patient's response to other treatments for MVA-related impairments, or ○ Possible interference in the patient/claimant/client's usual home, school, or work life, due to psychological impairments. ○ Psychological symptoms causing discomfort/distress, or impairment (e.g. driving anxiety affecting one's ability to travel comfortably, or rumination affecting one's usual cognition and ability to sleep) • Assessments/examinations proposed for treatment/rehabilitation will focus on gathering information to diagnose patients' conditions and guide their treatment. The assessing psychologist may use the information directly in providing treatment. Alternatively, assessments/examinations may be conducted as consultations to other treatment providers. | |
| Assessment Activities and Time Ranges: It is the responsibility of the assessing psychologist to determine the particular interventions to be employed and times required within the ranges, dependent upon individual patient needs | |
| Multiple assessments/concurrent examinations (testing): Multiple assessments may be indicated by the initial intake screening, initial assessment, and/or responding to emergent issues in treatment. Psychometric examinations (testing) are diagnostic procedures, which may be required to provide additional data to be used in conjunction with an assessment. | |
| Assessment Activities | |
| Assessment Intervention (pick list for CCI Codes will be available on the OPA web site as well as at www.hcainfo.ca) | Ranges |
| Initial brief psychological interview/intake screening Time required is dependent on duration of patient interview, contact with other treatment providers, administration of initial screening instruments, brief preliminary review of available and relevant file material, etc. Identifies impairments requiring assessment, possible indications for psychological treatment, and need for crisis intervention. It is conducted to provide required information for submission of the OCF-18 for the proposed assessment. Therefore, time spent is included in the assessment proposal. Insurer is only obligated to pay if assessment is approved. | Cost included in the \$200 OCF-18 fee |
| Clinical Interview(s) with Patient and Collateral Sources, e.g., family members Time required is dependent on factors such as intellectual limitations, language impairments/disabilities, need to clarify a complex history, issues of causation, unusual clinical presentation, or multiple impairments. | 2.5 - 6 |
| General Clinical/ Health/ Rehabilitation Self-Report Inventories Includes selection, administration, scoring, and interpretation of self-report inventories. May include self-report instruments to address the following domains: emotional/health status, coping strategies, personality, psychopathology, mood, anxiety, pain, traumatic stressors, family/social relationship functioning, rehabilitation status. Where possible, include validity measures. Time required is dependent upon the need for more depth/breadth of instruments required. | 1 - 4 |
| Disbursements Disbursements may include, for example, cost of obtaining relevant records and previous raw test data, consumable test materials, and use of external scoring services. Such items are invoiced on a cost recovery basis only. | Cost recovery basis |
| Selective Review of Available, Relevant File Material May include a review of medical chart, IMEs, school and work records. Time required is dependent upon the complexity and length of the file. | 1 - 3 |
| Consultation with Health Professionals, the Insurer, or Others as Required Time required is dependent upon the number of consultations required for information gathering. | .5 - 2 |
| Documentation Includes analysis of all data, formulation of a diagnosis, planning for treatment, and preparation of an assessment report. Increase time as required for complex situations that require more extensive data analysis and documentation. | 3 - 6 |
| Feedback Interview Includes in-person explanation and review of assessment findings and report, a discussion of the treatment plan, and obtaining informed consent for treatment and communication. Time required increases with the need for longer or additional feedback interview(s), e.g., longer sessions for patients with intellectual limitations, language impairments/disabilities, or serious/multiple psychological impairments; additional sessions with parents/teachers of children/adolescents. | 1 - 2 |
| Total Assessment Hours and Maximum Costs per Assessment/Examination (Testing): Note the SABS states, <i>Despite any other provision of this Regulation, an insurer shall not pay, (a) more than a total of \$2,000 in respect of fees and expenses for conducting any one assessment or examination and for preparing reports in connection with it, whether it is conducted at the instance of the insured person or the insurer.</i> In the Professional Services Guideline the maximum hourly psychologist fee is \$141.55 (\$169.63 for patients with Catastrophic Impairments). This is the equivalent of approximately 14 hours (11.75 at CAT rate). | |

Table II: Guideline for Clinical/Health/Rehabilitation Psychometric Examination (Testing)

| Indicators for Examination (Testing): Testing is reasonable and necessary when the brief psychological interview/intake screen confirms that : | |
|--|---------------|
| <ul style="list-style-type: none"> • Psychometric testing is required to provide additional data to be used in conjunction with an assessment • Assessments/examinations proposed for treatment/rehabilitation will focus on gathering information to diagnose patients' conditions and guide their treatment. The assessing psychologist may use the information directly in providing treatment. Alternatively, assessments/examinations may be conducted as consultations to other treatment providers. | |
| Examination Activities and Time Ranges: It is the responsibility of the assessing psychologist to determine the particular interventions to be employed and times required within the ranges, dependent upon individual patient needs | |
| Multiple assessments/concurrent examinations (testing): Multiple assessments may be indicated by the initial intake screening, initial assessment, and/or responding to emergent issues in treatment. Psychometric examinations (testing) are diagnostic procedures which may be required to provide additional data to be used in conjunction with an assessment. | |
| Examination (Testing) Activities | |
| Examination Intervention (pick list for CCI Codes will be available on the OPA web site as well as at www.hcaiinfo.ca) | Ranges |
| General Clinical/ Health/ Rehabilitation Psychometric Testing Includes selection, administration, scoring, and interpretation of psychometric tests. May include testing the following domains: emotional/health status, coping strategies, personality, psychopathology, mood, anxiety, pain, traumatic stressors, family/social relationship functioning, general intellectual/cognitive functioning, rehabilitation status. Where possible, include validity measures. Time required is dependent upon the need for more depth/breadth of testing. | 1 - 10 |
| Total Examination Hours and Maximum Costs per Assessment/Examination (Testing): Note the SABS states, <i>Despite any other provision of this Regulation, an insurer shall not pay, (a) more than a total of \$2,000 in respect of fees and expenses for conducting any one assessment or examination and for preparing reports in connection with it, whether it is conducted at the instance of the insured person or the insurer.</i> In the Professional Services Guideline the maximum hourly psychologist fee is \$141.55 (\$169.63 for patients with Catastrophic Impairments). This is the equivalent of approximately 14 hours (11.75 at CAT rate). | |
| Psychometric Examinations (testing) may be administered by the psychologist or involve test administration by a psychometrist under the direction and supervision of the psychologist. Regardless of how the examination (testing) is organized, the total cost should not exceed the cost which would be expected if the psychologist themselves. | |

REQUIREMENTS FOR SPECIFIC SPECIALIZED ASSESSMENTS AND EXAMINATIONS (TESTING) - (NEUROPSYCHOLOGICAL, PSYCHOVOCATIONAL, PSYCHOEDUCATIONAL ASSESSMENTS AND EXAMINATIONS (TESTING))

While several sources of information are available to guide neuropsychological assessment proposals, fewer such resources are available for psychovocational and psychoeducational assessments. As a result, the following information is presented as similar and applicable to all specific specialized psychological assessments where evaluation of cognitive strengths and weaknesses, skills and abilities, in addition to emotional and behavioural factors are involved.

The American Academy of Clinical Neuropsychology (AACN) (2007) has published guidelines for neuropsychological assessment that are consistent with the American Psychological Association's (2002) Ethical Principles of Psychologists and Code of Conduct, the Criteria for Practice Guideline Development and Evaluation (2002) and the Determination and Documentation of the Need for Practice Guidelines (2005) document. The authors caution that these guidelines do not constitute standards for all situations, are not mandatory, and may not apply to every clinical situation. In describing the essential features of a neuropsychological assessment, these guidelines state, "The distinctive features of neuropsychological evaluations and consultations in assessing brain function and dysfunction include the use of objective neuropsychological tests, systematic behavioral observations, and interpretation of the findings based on knowledge of neuropsychological manifestations of brain-related conditions" (p 212). It is noted that a neuropsychologist does not just administer and score a particular set of tests, but conceptualizes assessment results in the context of a broader understanding of brain-behavior relationships.

Components of Neuropsychological (and other) Specific, Specialized Assessments and Examinations

The following components for a neuropsychological assessment are recommended by AACN (2007), and are similar to those that would be required for psychoeducational and psychovocational assessments:

Decision to evaluate: the psychologist needs to determine whether a neuropsychological assessment is pertinent to the referral question or whether another kind of evaluation is needed.

Review of records: since subjective reports may be inaccurate, it is important to obtain and review relevant written records of background. In case of suspected cognitive changes, an attempt to obtain a patient's medical records is advisable in most cases. The aim of the evaluation determines to what extent the neuropsychologist gathers information from collateral sources.

Interview with patient and significant others: often this provides much of the critical data needed to draw conclusions. Elements of the interview include events that led to the referral, duration of presenting problems, primary symptoms and changes in symptoms over time, effect of symptoms on daily functioning, results of previous tests and procedures, and patient's strengths and interests. Background information is similar to that normally collected for other evaluations and depends on the question being answered in assessment. Interview with family members or friends, when possible, should be done in case of lack of awareness of deficit or memory/motivation issues.

Measurement procedures: "neuropsychological assessments vary in content depending on their purpose but they typically assess multiple neurocognitive and emotional functions" (p.220). These include intellectual functions, academic skills, receptive and expressive language, simple and complex attention, learning and memory, visuospatial abilities, executive functions, and sensorimotor skills. Ideally, measures of personality, social-emotional functioning and adaptive behavior are also included. If comprehensive testing is contra-indicated (such as when a client is acutely medically ill or unstable), testing select domains of functioning or a general screening of cognitive skills is appropriate. "A comprehensive assessment should be thorough but also efficient and respectful of a patient's time and resources... in clinical practice, clinical neuropsychologists often find it necessary and advisable to administer a selected set of subtests instead of the complete test battery" (p.221). The number of tests selected and administration time depends on the referral question and patient variables (e.g., fatigue, resources etc.).

Assessment of motivation and effort: this is considered critical in most clinical settings. This information can be gleaned from numerous sources (including observation, performance across multiple tests, unusual areas of impairment, or standardized tests of effort). It is wise to use more than one indicator of effort.

Assessment of concurrent validity: when fatigue, level of arousal, and engagement are in question, it is particularly important to draw inferences about a specific skill or ability from multiple tests.

Interpretation: interpretation of findings is based on the patient's history and problems, direct observation levels or patterns of test performance, current theory and knowledge, psychological/ cultural influences, and daily functioning. Conclusions include those regarding the nature of the cognitive deficit, potential source of the deficit, and implications for treatment and prognosis. *These conclusions require a review of performance across multiple tests and overall pattern of test scores.*

Similarly, Lezak, Howieson, and Loring (2004) recommend including the following:

Referral and determination of when to examine: extent of examination and decision to test or not depends on the type of problem and onset of symptoms. For instance, examination immediately after TBI or stroke is recommended only as a general screen to determine level of awareness, comprehension, and possibly competence (i.e., general mental status relevant to further rehab planning in the acute stage). More formal assessments are carried out following the early post-acute stage (i.e., after 6-12 weeks post injury).

Formal testing can be repeated between 3 and 6 months post injury and then 1-2 years later for long-term rehabilitation, educational or vocational planning. This does not apply to slowly evolving conditions (e.g., dementing process or tumors).

Interview and Observation: This involves interview with the patient and a collateral source, obtaining information relevant to the referral question in ways that is sensitive to patients' needs, resources, and limitations.

Test selection: This depends on the referral question and purpose of the exam. Aside from following general rules of test selection (i.e., ensuring that selected tests have proper psychometric properties for intended use), a basic test battery typically includes tests that cover major cognitive domains including attention, visuosperception and visual reasoning, memory and learning, verbal functions and academic skills, construction, concept formation, self-regulation and other behavioural conditions, motor ability, and emotional status. Some tests can be dropped or added depending on the needs of the patient as the evaluation continues.

"Interpretive interview"/feedback: this is an essential component of neuropsychological examination.

In general, no single piece of information is informative outside of a larger comprehensive exam even when the exam is being done for descriptive purposes only. To set the context for interpretation of data, the patient's background information is essential across many facets of a patient's life (relevant to the referral question). This data is gleaned from interview with the patient and a collateral source, medical file review, and an understanding of other social/psychological circumstances surrounding the assessment.

We note that cognitive impairment has subjective and objective dimensions, both of which are potentially informative about the source and severity of impairment. Information on the two can be divergent, and provide different information about client characteristics relevant to diagnosis and treatment planning. In the presence of cognitive complaints, both dimensions must be evaluated: the subjective aspect is evaluated via interview and self-report, while the objective aspect requires administration of neuropsychological tests.

Some core cognitive abilities that should be considered as a part of an evaluation of adults with cognitive impairment complaints/symptoms include: attention, working memory, speed of processing, receptive language, expressive language, spatial skills, learning, memory, and executive functions. In addition to these, intelligence, academic achievement, motor functioning and somatosensory functioning are often included in a comprehensive neuropsychological exam, but need not necessarily be included in every evaluation (depending on purpose and client characteristics).

We note that these Guidelines have not specifically addressed implications for neuropsychological assessment of children and adolescents.

Specific Concerns when Assessing MVA Impairments

With regard specifically to conducting specific, specialized assessments after an MVA, according to Iverson, Brooks, and Ashton (2008), the following components must be included in a neuropsychological assessment to correctly interpret test data and arrive at a correct diagnosis: (i) performance on psychometric cognitive testing, (ii) mechanism of injury, (iii) medical, psychological, and psychiatric history pre- and post-MVA, (iv) current levels of daily functioning; (v) access to additional sources of information, including collateral interviews, records, and behavioural observations. The authors note that psychometric testing alone is not adequate because there are no psychometric criteria that alone define cognitive performance without collateral information. The authors further note that when assessing cognitive impairment following an MVA, multiple sources of information are particularly important because many different conditions can contribute to subjective complaints and objective cognitive problems including:

- **Traumatic Brain Injury**: impairments are highly individualized and difficult to predict, but are associated with objective findings particularly within the first 3 months following the accident.
- **Depression**: onset usually occurs in about 6 months after the MVA, particularly in people who also have PTSD, chronic pain, and TBI. Depression is associated with subjective cognitive complaints, but usually does not yield low test scores, unless it is severe. Cognitive areas that tend to be most affected include memory, psychomotor speed, and sustained attention. Severity of depression must be considered in interpreting cognitive data because it can mimic post-concussive syndrome.
- **PTSD**: is mainly associated with subjective cognitive complaints. Although objective neuropsychological findings frequently fail to reveal cognitive deficits, PTSD may be associated with poorer performance on verbal learning and memory. PTSD alone does not cause decline in overall IQ scores on testing.
 - o When clients have PTSD, evaluation of cognitive impairments becomes complicated by pre-morbid factors that may also make people more prone to developing PTSD in the first place including: pre-existing or co-occurring depression, substance use, or pain; pre-existing low IQ, poor cognitive performance, and academic achievement;
 - o Assessment of cognitive impairment in the presence of PTSD needs to be quite comprehensive to account for the potential impact of these pre-morbid factors.
- **Chronic pain** is associated with subjective complaints that can mimic post-concussive syndrome. Effort testing is particularly important because these patients are most likely to demonstrate poor effort or exaggeration of symptoms.
- **Insomnia and chronic sleep problems** are associated with subjective reports of reductions in attention, concentration, and mental efficiency. These problems do not always show up as deficits on objective cognitive tests in the absence of co-morbid neurological or psychological injuries.

Specific Concerns when Assessing Mild TBI in Adults

Iverson, Brooks, and Ashton (2008) further suggest that when evaluating post-MVA cognitive impairment problems, the following pre-morbid factors also should be evaluated because they tend to be associated with an increased risk of being in an MVA (and thus are prevalent in the MVA population), and can influence symptom presentation: ADHD, Learning Disability, Substance Abuse Disorders, Diabetes, CVD, Benzodiazepine use, and MCI/Early Dementia. Thorough review of the records and history is required to evaluate presence and impact of these factors on symptom presentation.

When assessing mild TBI, it is noted that slightly different procedures and greater sensitivity may be required. For example, Ruff, et al (2009) indicate that the interview should include assessment of retrograde amnesia, which relies on asking the patient to detail the events leading to potential TBI and determination of what the patient remembers or has been told by others. This is not always clear in second-hand notes. Other factors that may produce retrograde amnesia should be queried during the interview. The interviewer should seek to differentiate fear and anxiety responses at the time of trauma

from physiological effects that would produce a feeling of being “dazed” by thoroughly exploring peri-traumatic distress factors. Also, establishing a timeline of experiences and emotions is important (i.e., feeling dazed, disoriented or confused should follow the injury and not be an anticipatory response). Finally, a thorough examination of common physical and neurologic signs of TBI should be explored.

It is also suggested that one should not assume that all health-care providers assess retrospective gaps in memory (e.g. PTA) sufficiently. Therefore, a detailed examination of the patient’s recall, even if conducted days, weeks, or months post-injury is recommended, despite the fact that recall of PTA can be affected by many other factors, including normal forgetting. Ruff, et al. (2009) also suggest that patients generally are unable to report accurately on loss of consciousness, since post-traumatic amnesia usually persists for longer than LOC and affects recall. Thus, use of collateral sources of information for determining LOC is recommended, rather than relying only on patient interview data. Mild TBI may still have occurred without LOC, so it is recommended that, “in the absence of LOC or focal neurologic signs, either a period of altered consciousness (i.e. some period of confusion) or PTA (gap in memory following injury) is required. PTA is frequently the primary and most specific diagnostic indicator of injury” (p.6). The authors note the ease with which false-negative diagnoses may occur for patients who have no memory of the injury, but who were fully oriented when emergency personnel arrived on scene: “the documentation in the medical records of the patient being fully oriented at the scene does not preclude that the patient experienced a gap in memory prior to the evaluation of the paramedics. Therefore, when the possibility of a mild TBI exists, it is necessary to assess the patient’s status retrospectively... it is essential to determine what the patient remembers versus what he or she has been told or has surmised” (p.6). Other potential reasons for memory loss must be considered (e.g. acute stress, panic, pain, alcohol, drugs, medication effects, etc.), and a careful differential diagnosis of the amnesia is required. There is no minimal duration of PTA for consideration of a mild TBI; even PTA of a few seconds qualifies.

Assessment of mild TBIs also includes careful evaluation of post- and peri-traumatic confusion and disorientation to distinguish between dissociation or other strong emotional reactions, and the effects of an acceleration-deceleration injury to the brain. It is noted that mild TBIs do not usually cause focal neurologic signs, but that physical symptoms such as fatigue, sleep disturbance, headache, vertigo/dizziness, tinnitus, hyperacusis, photosensitivity, and reduced tolerance for alcohol and medications generally follow and are used in the differential diagnosis of concussion.

We note these guidelines do not specifically address assessment/examination of mild TBI in children and adolescents.

Specific Concerns when Assessing Polytrauma

The issue of multiple, overlapping injury conditions also complicates matters, when assessing for TBI and concurrent psychological conditions. Girondon, et al. (2009) mention the special difficulty of assessing pain in patients with cognitive and communication impairments due to moderate/ severe TBI, and references several guidelines for use in these situations. The authors emphasize specifically not relying on clinician judgment in assessing pain, but rather using multiple sources of information, especially individual self-report and report of collateral sources.

TIME REQUIRED FOR NEUROPSYCHOLOGICAL, PSYCHOVOCATIONAL, AND PSYCHOEDUCATIONAL ASSESSMENTS

Neuropsychological assessments and other specific specialized psychological assessments must be of sufficient depth to answer relevant questions. As such, all neuropsychological assessments (even those examining higher order functions for rehabilitation) should be sufficiently comprehensive in their coverage of functional domains, and extend beyond basic screening, which is simply a reflection of mental status.

The OPA agrees strongly with the authors of the Camara (2000) study, as well as with Sweet et al. (2002, 2003) in recommending further education of insurers and regulators regarding required improvements in reimbursement practices for compensation of neuropsychological and other assessment services:

practitioners must be creative in incorporating assessment as a central component within their interventions and treatments so that it is not considered an option or supplemental service that must be justified and added onto reimbursement for treatment. Assessment services are often medical necessities and not an option. Practitioners should view and portray assessments as an integral component of effective treatment planning and mental health interventions... More constructive interactions with mental health care systems are needed to reduce the misunderstandings and biases against assessment and to help define criteria for medical necessity of assessment services.... Assessment services must be viewed as a more integrated component of professional practice rather than an independent service. (Camara, 2000, p. 153)

We note that this view is consistent with multiple assessments and examinations as well as blended assessment and treatment services.

Indicators for a Neuropsychological Assessment/Examination

When neuropsychological concerns including reports of cognitive impairments/ deficits, post-concussion type symptoms, and history suggestive of concussion/ brain injury are noted, neuropsychological assessment is reasonably required. Neuropsychological assessments are diagnostic, descriptive, and prescriptive and are not limited in relevance to patients with evidence of structural brain damage, but are also necessary to document impairments in patients with possible/probable general clinical psychological and somatic (e.g. pain and sleep) disorders, as well as neuropsychological and neurobehavioural disorders, and for planning appropriate cognitive rehabilitation programs. Neuropsychological assessment provides objective documentation of cognitive and motor complaints and is useful for planning treatment and rehabilitation, educational and vocational integration.

Table III: Guideline for Neuropsychological Assessments

| Table III: Guideline for Neuropsychological Assessments | |
|---|---------------------------------------|
| Indicators for Neuropsychological Assessment: | |
| When neuropsychological concerns including reports of cognitive impairments/ deficits, post-concussion type symptoms, and history suggestive of concussion/ brain injury are noted, neuropsychological assessment is reasonably required. Neuropsychological assessments are diagnostic, descriptive, and prescriptive and are not limited in relevance to patients with evidence of structural brain damage, but are also necessary to document impairments in patients with possible/probable general clinical psychological and somatic (e.g. pain and sleep) disorders, as well as neuropsychological and neurobehavioural disorders, and for planning appropriate cognitive rehabilitation programs. Neuropsychological assessment provides objective documentation of cognitive and motor complaints and is useful for planning treatment and rehabilitation, educational and vocational integration. | |
| <ul style="list-style-type: none"> Assessments/examinations proposed for treatment/rehabilitation will focus on gathering information to diagnose patients' conditions and guide their treatment. The assessing psychologist may use the information directly in providing treatment. Alternatively, assessments/examinations may be conducted as consultations to other treatment providers. | |
| Multiple assessments/concurrent examinations (testing): Multiple assessments may be indicated by the initial intake screening, initial assessment, and/or responding to emergent issues in treatment. Neuropsychometric examinations (testing) are diagnostic procedures, which may be required to provide additional data to be used in conjunction with an assessment. | |
| Assessment Activities and Time Ranges: Examination Activities and Time Ranges: It is the responsibility of the assessing psychologist to determine the particular interventions to be employed and times required within the ranges, dependent upon individual patient needs | |
| Assessment Activities | |
| Assessment Intervention (pick list for CCI Codes will be available on the OPA web site as well as at www.hcaiinfo.ca) | Hours |
| Initial brief neuropsychological interview/intake screening Time required is dependent on duration of patient interview, contact with other treatment providers, administration of initial screening instruments, brief preliminary review of available and relevant file material, etc. Identifies neuropsychological impairments requiring assessment, possible indications for psychological treatment/rehabilitation, and need for crisis intervention. It is conducted to provide required information for submission of the OCF-18 for the proposed assessment. Therefore, time spent is included in the assessment proposal. Insurer is only obligated to pay if assessment is approved. | Cost included in the \$200 OCF-18 fee |
| Clinical Interview(s) with Patient and Collateral Sources, e.g., family members Time required within range is dependent on length of time needed for patient interviews and/or additional interview(s), e.g. due to intellectual limitations, language impairments/ disabilities, need to clarify complex history, causation, unusual clinical presentation, or multiple impairments. | 2.5- 6 |
| Neuropsychological Self Report Inventories Includes selection, administration, scoring and interpretation of self-report inventories. Assessment may include self-report inventories to address the following domains: emotional/health status, coping strategies, personality, psychopathology, mood, anxiety, pain, traumatic stressors, family/social relationship functioning, general cognitive functioning, adaptive abilities, rehabilitation status. Where possible include validity measures. Time required within range is dependent upon need for more depth/ breadth of self-report instruments required. | 2-5 |
| Disbursements Appropriate disbursements may include, for example, cost of obtaining relevant records and previous raw test data, consumable test materials, and use of external scoring services. Such items are invoiced on a cost recovery basis. | Billed on a cost recovery basis |
| Selective Review of Available, Relevant File Material Includes review of medical chart, IMEs, school and work records. Time required within range is dependent upon the complexity and length of the file. | .5 – 8 |
| Consultation with Health Professionals, the Insurer, and Others Required Time required within range is dependent upon need for additional consultations and/or information gathering. | .5 – 2 |
| Documentation Includes analysis of all data, formulation of a diagnosis, plan for treatment, and preparation of an assessment report. Increase time as required within range for complex situations that require more extensive data analysis and documentation. | 2 – 8 |
| Feedback Interview Includes in-person explanation and review of assessment findings and report, a discussion of the treatment plan, and obtaining informed consent for treatment and communication. Time required increases with the need for longer or additional feedback interview(s), e.g., longer sessions for patients with intellectual limitations, language impairments/disabilities, or serious/multiple psychological impairments; additional sessions with parents/teachers of children/adolescents. | 1 – 3 |
| Total Examination Hours and Maximum Costs per Assessment/Examination (Testing): Note the SABS states, <i>Despite any other provision of this Regulation, an insurer shall not pay, (a) more than a total of \$2,000 in respect of fees and expenses for conducting any one assessment or examination and for preparing reports in connection with it, whether it is conducted at the instance of the insured person or the insurer.</i> In the Professional Services Guideline the maximum hourly psychologist fee is \$141.55 (\$169.63 for patients with Catastrophic Impairments). This is the equivalent of approximately 14 hours (11.75 at CAT rate). | |

Table IV: Guideline for Neuropsychometric Examination (testing)

| Indicators for Examination (Testing): Testing is reasonable and necessary when the brief psychological interview/intake screen confirms that: | |
|--|---------------|
| <ul style="list-style-type: none"> • Neuropsychometric examination testing is required to provide additional data to be used in conjunction with a Neuropsychological assessment • Assessments/examinations proposed for treatment/rehabilitation will focus on gathering information to diagnose patients' conditions and guide their treatment. The assessing psychologist may use the information directly in providing treatment. Alternatively, assessments/examinations may be conducted as consultations to other treatment providers. | |
| Examination Activities and Time Ranges: It is the responsibility of the assessing psychologist to determine the particular interventions to be employed and times required within the ranges, dependent upon individual patient needs | |
| Multiple assessments/concurrent examinations (testing): Multiple assessments may be indicated by the initial intake screening, initial assessment, and/or responding to emergent issues in treatment. Neuropsychometric examinations (testing) are diagnostic procedures that may be required to provide additional data to be used in conjunction with an assessment. | |
| Examination (testing) Activities | |
| Examination Intervention (pick list for CCI Codes will be available on the OPA web site as well as at www.hcaiinfo.ca) | Ranges |
| <p>Neuropsychometric Testing Examples of the various approaches include but are not limited to the following: In some situations, psychologists will be involved very early in the injured person's care to provide a baseline examination (testing) and then repeated measures to determine initial needs and changes over time. Other situations may separate examinations of broad general batteries from examinations of more highly specialized testing of specific functions.</p> <p>Includes selection, administration, scoring and interpretation of psychometric tests. Examination (testing) may include testing of the following domains: emotional/health status, coping strategies, personality, psychopathology, mood, anxiety, pain, traumatic stressors, family/social relationship functioning, general cognitive functioning, adaptive abilities, rehabilitation status and administration of validity measures. In addition, Neuropsychological examination (testing) may include tests of sensory abilities; motor skills; psychomotor speed; attention/concentration; language; visuo-spatial/ constructional abilities; intellectual abilities; memory and learning; executive functioning; judgment; self awareness; initiation; and self-control. Time required within range is dependent upon need for more depth/ breadth of testing required.</p> <p>Where possible, include validity measures.</p> <p>Time required is dependent upon the need for more depth/breadth of testing.</p> | 1 - 14 |
| Total Examination Hours and Maximum Costs per Assessment/Examination (testing): Note the SABS states, <i>Despite any other provision of this Regulation, an insurer shall not pay, (a) more than a total of \$2,000 in respect of fees and expenses for conducting any one assessment or examination and for preparing reports in connection with it, whether it is conducted at the instance of the insured person or the insurer.</i> In the Professional Services Guideline the maximum hourly psychologist fee is \$141.55 (\$169.63 for patients with Catastrophic Impairments). This is the equivalent of approximately 14 hours (11.75 at CAT rate). | |
| Psychometric Examinations/testing may be administered by the psychologist or involve test administration by a psychometrist under the direction and supervision of the psychologist. Regardless of how the examination (testing) is organized, the total cost should not exceed the cost which would be expected if the psychologist themselves. | |

PSYCHOVOCATIONAL AND PSYCHOEDUCATIONAL ASSESSMENT

Traditionally, the standard of practice for these kinds of evaluations has been to provide two distinct assessments as well as required examinations (testing). Given that such evaluations are typically performed well beyond the timeframe of initial clinical psychological assessments for treatment purposes, the first role may be to provide a current psychological diagnostic and impairment profile of the individual, using the foundational clinical/health/rehabilitation assessment. The second is to provide a comprehensive analysis of the client's personal and educational/vocational history, characteristics, and concerns. This assessment information is then augmented by current testing examination results aimed at determining cognitive capacity, strengths and weaknesses, academic achievement, and aptitudes relative to education planning or (re)-training requirements. In some cases, the foundational clinical/health/rehabilitation assessment may be combined with the specific specialized assessment; in others, this will not be possible, and separate line items on a single OCF-18 will be required. Specific specialized testing examinations are separate, comprehensive, and are listed separately on the OCF-18. (See our separate Guide line tables).

Indicators for a Psychovocational Assessment/Examination

Psychovocational assessment is reasonable and necessary when vocational issues are anticipated, for example, difficulty returning to or maintaining level of performance in former employment, need to identify suitable alternative employment type or vocational retraining needs.

Indicators for a Psychoeducational Assessment/Examination

Psychoeducational assessment is reasonable and necessary when educational concerns are anticipated, for example, difficulty returning to or maintaining level of performance and progress in former educational program, or need to identify suitable alternative modifications or supports,

Table V: Guideline for Psychovocational Assessments

| Assessment Activities | |
|--|--------------|
| Assessment Intervention (pick list for CCI Codes will be available on the OPA web site as well as at www.hcaiinfo.ca) | Hours |
| Indicators for Psychovocational Assessment: Psychovocational assessment is reasonable and necessary when vocational issues are anticipated, for example, difficulty returning to or maintaining level of performance in former employment, need to identify suitable alternative employment type or vocational retraining needs. | |
| <ul style="list-style-type: none"> Assessments/examinations proposed for treatment/rehabilitation will focus on gathering information to diagnose patients' conditions and guide their treatment. The assessing psychologist may use the information directly in providing treatment. Alternatively, assessments/examinations may be conducted as consultations to other treatment providers. | |
| Multiple assessments/concurrent examinations (testing): Multiple assessments may be indicated by the initial intake screening, initial assessment, and/or responding to emergent issues in treatment. Psychovocational psychometric examinations (testing) are diagnostic procedures that may be required to provide additional data to be used in conjunction with an assessment. | |
| Assessment Activities and Time Ranges: Examination Activities and Time Ranges: It is the responsibility of the assessing psychologist to determine the particular interventions to be employed and times required within the ranges, dependent upon individual patient needs | |
| Initial brief psychovocational interview/intake screening Time required is dependent on duration of patient interview, contact with other treatment providers, administration of initial screening instruments, brief preliminary review of available and relevant file material, etc. Identifies psychovocational impairments requiring assessment, and possible indications for psychovocational treatment/rehabilitation. It is conducted to provide required information for submission of the OCF-18 for the proposed assessment. Therefore, time spent is included in the assessment proposal. Insurer is only obligated to pay if assessment is approved. | |
| Cost included in the \$200 OCF-18 fee | |
| Clinical Interview(s) with Patient and Collateral Sources, e.g., employers Time required within range is dependent on length of time needed for patient interviews and/or additional interview(s), e.g. due to intellectual limitations, language impairments/ disabilities, need to clarify complex history, causation, unusual clinical presentation, or multiple impairments. | |
| 2.5- 6 hours | |
| Psychovocational Self Report Inventories Includes selection, administration, scoring and interpretation of self-report inventories. May include self-report inventories regarding the following domains: emotional/ health status, coping strategies, personality, psychopathology, mood, anxiety, pain, traumatic stressors, family/ social relationship functioning, general cognitive functioning, adaptive abilities, rehabilitation status. Labor market assessment may be required. Time required within range is dependent upon need for more depth/ breadth of testing. Where possible include validity measures. Time required within range is dependent upon need for more depth/ breadth of self-report instruments required. | |
| 2-5 hours | |
| Disbursements Appropriate disbursements may include, for example, cost of obtaining relevant records and previous raw test data, consumable test materials, and use of external scoring services. Such items are invoiced on a cost recovery basis. | |
| Billed on a cost recovery basis | |
| Selective Review of Available, Relevant File Material Includes review of medical chart, IMEs, school and work records. Time required within range is dependent upon the complexity and length of the file. | |
| .5 – 8 hours | |
| Consultation with Health Professionals, the Insurer, and Others Required Time required within range is dependent upon need for additional consultations and/or information gathering. | |
| .5 – 2 hours | |
| Documentation Includes analysis of all data, formulation of a diagnosis, plan for treatment, and preparation of an assessment report. Increase time as required within range for complex situations that require more extensive data analysis and documentation. | |
| 2 – 8 hours | |
| Feedback Interview Includes in-person explanation and review of assessment findings and report, a discussion of the treatment/rehabilitation plan, and obtaining informed consent for treatment and communication. Time required increases with the need for longer or additional feedback interview(s), e.g., longer sessions for patients with intellectual limitations, language impairments/disabilities, or serious/multiple psychological impairments; additional sessions with parents/teachers of children/adolescents. | |
| 1 – 3 hours | |
| Total Examination Hours and Maximum Costs per Assessment/Examination (Testing): Note the SABS states, <i>Despite any other provision of this Regulation, an insurer shall not pay, (a) more than a total of \$2,000 in respect of fees and expenses for conducting any one assessment or examination and for preparing reports in connection with it, whether it is conducted at the instance of the insured person or the insurer.</i> In the Professional Services Guideline the maximum hourly psychologist fee is \$141.55 (\$169.63 for patients with Catastrophic Impairments). This is the equivalent of approximately 14 hours (11.75 at CAT rate). | |

Table VI: Guideline for Psychovocational Psychometric Examination (testing)

| Indicators for Examination (Testing): Testing is reasonable and necessary when the brief psychological interview/intake screen confirms that: | |
|--|---------------|
| <ul style="list-style-type: none"> • Psychovocational psychometric examination (testing) is required to provide additional data to be used in conjunction with an assessment • Assessments/examinations proposed for treatment/rehabilitation will focus on gathering information to diagnose patients' conditions and guide their treatment. The assessing psychologist may use the information directly in providing treatment. Alternatively, assessments/examinations may be conducted as consultations to other treatment providers. | |
| Examination Activities and Time Ranges: It is the responsibility of the assessing psychologist to determine the particular interventions to be employed and times required within the ranges, dependent upon individual patient needs | |
| Multiple assessments/concurrent examinations (testing): Multiple assessments may be indicated by the initial intake screening, initial assessment, and/or responding to emergent issues in treatment. Psychovocational psychometric examinations (testing) are diagnostic procedures that may be required to provide additional data to be used in conjunction with an assessment. | |
| Examination (testing) Activities | |
| Examination Intervention (pick list for CCI Codes will be available on the OPA web site as well as at www.hcaiinfo.ca) | Ranges |
| Psychovocational psychometric Testing Includes selection, administration, scoring and interpretation of psychometric tests. May test of the following domains: emotional/ health status, coping strategies, personality, psychopathology, mood, anxiety, pain, traumatic stressors, family/ social relationship functioning, general cognitive functioning, adaptive abilities, rehabilitation status and administration of validity measures. In addition, Psychovocational Assessments may include testing of intellectual abilities; academic aptitude (reading, writing, numerical); communication/language abilities (expressive, receptive); organizational and planning skills; abstract reasoning; distractibility; vocational aptitude; vocational interests; task skills analysis; transferable skills; endurance; persistence; adaptation and flexibility; motivation; achievement need; and learning ability. Labour market assessment may be required. Where possible include validity measures. Time required within range is dependent upon need for more depth/ breadth of testing required. | 1 - 14 |
| Total Examination Hours and Maximum Costs per Assessment/Examination (Testing): Note the SABS states, <i>Despite any other provision of this Regulation, an insurer shall not pay, (a) more than a total of \$2,000 in respect of fees and expenses for conducting any one assessment or examination and for preparing reports in connection with it, whether it is conducted at the instance of the insured person or the insurer.</i> In the Professional Services Guideline the maximum hourly psychologist fee is \$141.55 (\$169.63 for patients with Catastrophic Impairments). This is the equivalent of approximately 14 hours (11.75 at CAT rate). | |
| Psychometric Examinations/testing may be administered by the psychologist or involve test administration by a psychometrist under the direction and supervision of the psychologist. Regardless of how the examination is organized, the total cost should not exceed the cost which would be expected if the psychologist themselves. | |

Table VII: Guideline for Psychoeducational Assessments

| Assessment Activities | |
|--|---------------------------------------|
| Assessment Intervention (pick list for CCI Codes will be available on the OPA web site as well as at www.hcainfo.ca) | Hours |
| Indicators for Psychoeducational Assessment: Psychoeducational assessment is reasonable and necessary when educational concerns are anticipated, for example, difficulty returning to or maintaining level of performance and progress in former educational program, or need to identify suitable alternative modifications or supports. | |
| <ul style="list-style-type: none"> Assessments/examinations proposed for treatment/rehabilitation will focus on gathering information to diagnose patients' conditions and guide their treatment. The assessing psychologist may use the information directly in providing treatment. Alternatively, assessments/examinations may be conducted as consultations to other treatment providers. | |
| Multiple assessments/concurrent examinations (testing): Multiple assessments may be indicated by the initial intake screening, initial assessment, and/or responding to emergent issues in treatment. Psychoeducational psychometric examinations (testing) are diagnostic procedures that may be required to provide additional data to be used in conjunction with an assessment. | |
| Assessment Activities and Time Ranges: Examination Activities and Time Ranges: It is the responsibility of the assessing psychologist to determine the particular interventions to be employed and times required within the ranges, dependent upon individual patient needs | |
| Initial brief psychological interview/intake screening Time required is dependent on duration of patient interview, contact with other treatment providers, administration of initial screening instruments, brief preliminary review of available and relevant file material, etc. Identifies psychovocational impairments requiring assessment, and possible indications for psychological treatment/rehabilitation. It is conducted to provide required information for submission of the OCF-18 for the proposed assessment. Therefore, time spent is included in the assessment proposal. Insurer is only obligated to pay if assessment is approved. | Cost included in the \$200 OCF-18 fee |
| Clinical Interview(s) with Patient and Collateral Sources, e.g., family members, Time required within range is dependent on length of time needed for patient interviews and/or additional interview(s), e.g. due to intellectual limitations, language impairments/ disabilities, need to clarify complex history, causation, unusual clinical presentation, or multiple impairments. | 2.5- 6 |
| Psychoeducational Self/Parent/Teacher Report Inventories Includes selection, administration, scoring and interpretation of self/parent/teacher-report inventories. Assessment may include inventories to address the following domains: emotional/health status, coping strategies, personality, psychopathology, mood, anxiety, pain, traumatic stressors, family/social relationship functioning, general cognitive functioning, adaptive abilities, rehabilitation status. Where possible include validity measures. Time required within range is dependent upon need for more depth/ breadth of self-report instruments required. | 2-5 |
| Disbursements Appropriate disbursements may include, for example, cost of obtaining relevant records and previous raw test data, consumable test materials, and use of external scoring services. Such items are invoiced on a cost recovery basis. | Billed on a cost recovery basis |
| Selective Review of Available, Relevant File Material Includes review of medical chart, IMEs, school and work records. Time required within range is dependent upon the complexity and length of the file. | .5 - 8 |
| Consultation with Health Professionals, School Teachers, the Insurer, and Others Required Time required within range is dependent upon need for additional consultations and/or information gathering. | .5 - 2 |
| Documentation Includes analysis of all data, formulation of a diagnosis, plan for treatment/rehabilitation, and preparation of an assessment report. Increase time as required within range for complex situations that require more extensive data analysis and documentation. | 2 - 8 |
| Feedback Interview Includes in-person explanation and review of assessment findings and report, a discussion of the treatment/rehabilitation plan, and obtaining informed consent for treatment and communication. Time required increases with the need for longer or additional feedback interview(s), e.g., longer sessions for patients with intellectual limitations, language impairments/disabilities, or serious/multiple psychological impairments; additional sessions with parents/teachers of children/adolescents. | 1 - 3 |
| Total Examination Hours and Maximum Costs per Assessment/Examination (Testing): Note the SABS states, <i>Despite any other provision of this Regulation, an insurer shall not pay, (a) more than a total of \$2,000 in respect of fees and expenses for conducting any one assessment or examination and for preparing reports in connection with it, whether it is conducted at the instance of the insured person or the insurer.</i> In the Professional Services Guideline the maximum hourly psychologist fee is \$141.55 (\$169.63 for patients with Catastrophic Impairments). This is the equivalent of approximately 14 hours (11.75 at CAT rate). | |

Table VIII: Guideline for Psychoeducational Psychometric Examination (testing)

| | |
|--|---------------|
| Indicators for Examination (Testing): Testing is reasonable and necessary when the brief psychological interview/intake screen confirms that: | |
| <ul style="list-style-type: none"> • Psychoeducational Psychometric testing is required to provide additional data to be used in conjunction with an assessment • Assessments/examinations proposed for treatment/rehabilitation will focus on gathering information to diagnose patients' conditions and guide their treatment. The assessing psychologist may use the information directly in providing treatment. Alternatively, assessments/examinations may be conducted as consultations to other treatment providers. | |
| Examination Activities and Time Ranges: It is the responsibility of the assessing psychologist to determine the particular interventions to be employed and times required within the ranges, dependent upon individual patient needs | |
| Multiple assessments/concurrent examinations (testing): Multiple assessments may be indicated by the initial intake screening, initial assessment, and/or responding to emergent issues in treatment. Psychoeducational psychometric examinations (testing) are diagnostic procedures that may be required to provide additional data to be used in conjunction with an assessment. | |
| Examination (testing) Activities | |
| Examination (Testing) Intervention (pick list for CCI Codes will be available on the OPA web site as well as at www.hcaiinfo.ca) | Ranges |
| <p>Psychoeducational Testing Includes test selection, administration, scoring and interpretation. Assessment may include testing the following domains: emotional/ health status, coping strategies, personality, psychopathology, mood, anxiety, pain, traumatic stressors, family/ social relationship functioning, general cognitive functioning, adaptive abilities, and rehabilitation status. In addition, psychoeducational assessments may include testing of intellectual abilities; academic skills and underlying processes (reading, writing, numerical); communication/language abilities (expressive, receptive); organizational and planning skills; abstract reasoning; distractibility; vocational aptitude; vocational interests; task skills analysis; transferable skills; endurance; persistence; adaptation and flexibility; motivation; achievement need; and learning ability.</p> <p>Where possible, include validity measures.</p> <p>Time required is dependent upon the need for more depth/breadth of testing.</p> | 1 - 14 |
| Total Examination Hours and Maximum Costs per Assessment/Examination (Testing): Note the SABS states, <i>Despite any other provision of this Regulation, an insurer shall not pay, (a) more than a total of \$2,000 in respect of fees and expenses for conducting any one assessment or examination and for preparing reports in connection with it, whether it is conducted at the instance of the insured person or the insurer.</i> In the Professional Services Guideline the maximum hourly psychologist fee is \$141.55 (\$169.63 for patients with Catastrophic Impairments). This is the equivalent of approximately 14 hours (11.75 at CAT rate). | |
| Psychometric Examinations/testing may be administered by the psychologist or involve test administration by a psychometrist under the direction and supervision of the psychologist. Regardless of how the examination (testing) is organized, the total cost should not exceed the cost which would be expected if the psychologist themselves. | |
| Total Examination Hours and Maximum Costs per Assessment/Examination (Testing): Note the SABS states, <i>Despite any other provision of this Regulation, an insurer shall not pay, (a) more than a total of \$2,000 in respect of fees and expenses for conducting any one assessment or examination and for preparing reports in connection with it, whether it is conducted at the instance of the insured person or the insurer.</i> In the Professional Services Guideline the maximum hourly psychologist fee is \$141.55 (\$169.63 for patients with Catastrophic Impairments). This is the equivalent of approximately 14 hours (11.75 at CAT rate). | |

REBUTTAL OF DENIED ASSESSMENT/TREATMENT PROPOSALS

The 2010 SABS do not provide funding for rebuttal of an insurer's denial of OCF-18 applications. However, psychologists are encouraged to provide reasonable arguments to an adjuster, if they feel that an inappropriate decision was made on a file. If, in the psychologist's opinion, a patient has been denied access to reasonable and necessary benefits, it may be worthwhile to register this concern in writing and submit it to the adjuster. This may result in a reversal of the adjuster's opinion on the proposed assessment/treatment, but even if the adjuster does not change their opinion it may result in improved access to future reasonable benefits (including assessment/treatment at a later date) as a result of mediation or arbitration.

Psychological Treatment Plans

INDICATORS TO PROPOSE PSYCHOLOGICAL TREATMENT

Factors indicating that psychological treatment consistent with accepted community and professional standards is reasonable and necessary include that an appropriate assessment has identified:

- A psychological impairment/condition/disorder resulting from the accident and its sequelae, and/or psychological factors that are having an effect on the treatment/rehabilitation of physical injuries (note that these are diagnosable using ICD-10 and do not need to meet DSM-IV-TR diagnostic criteria for a particular disorder to qualify for treatment);
- An effective or reasonable intervention exists;
- The patient is sufficiently motivated and can access treatment (barriers addressed);
- A sufficiently/ appropriately qualified practitioner is available (qualifications include language considerations, such that treatment should be provided by a psychologist who is able to deliver the service without the need for a translator).

Reviewers should use these as criteria when determining the reasonableness and necessity of the proposed treatment plan.

OCF-18 TREATMENT PLAN APPLICATION

Treatment Plan Application Approval, Review, and Initiation of Treatment

After completing the appropriate assessment, the psychologist completes the OCF-18 and with patient consent, submits it to the insurer. The insurer must respond within 10 business days with full or partial approval or denial. The insurer must provide medical or other reasons for any denial and may but is not required to obtain an IE. If the insurer does not respond within the time frames, treatment may begin and the insurer is obligated to pay for treatment provided until a response is given.

Treatment Interventions

A robust literature now indicates that psychological treatment interventions are the gold standard treatments of choice for many conditions and impairments. In many cases, these interventions produce treatment effects that are equivalent or superior to those achieved with medication. Additionally, psychological interventions have been found to be effective in helping clients with stress and anger management, facilitating lifestyle changes necessitated by various medical conditions (such as heart conditions, hypertension, and diabetes), and in adjusting to major illness (such as cancer), and disabilities (such as chronic pain or spinal cord injuries) (see Hunsley, 2003 for a review of this literature). The fact that psychological interventions are associated with far less symptom relapse than medications and have virtually no side effects may make them a more appealing alternative to some patients.

There is evidence to indicate that these results also apply to treatment of psychological injuries after an auto accident. A significant amount of research has been published on the successful treatment of post-traumatic stress after an auto accident in the past several years. Some of this research has been manualized into an intervention for MVA-related post-traumatic stress (Hickling and Blanchard, 2006).

However, while specific diagnosis-based protocols may be directly applicable to a subset of patients with psychological impairments due to an MVA (such as post-traumatic stress), many patients require treatments that are more individualized and intensive due to the complicated and interactive nature of their multiple impairments (e.g. post-traumatic stress, TBI, and chronic pain).

Diagnosis-based treatment protocols are designed for treatment of single conditions, and often are more effective for more straightforward, standard symptom or condition presentations. Given the small fraction of injured people in Ontario who receive psychological services, and the general information suggesting that the ones who do are those with multiple impairments, injuries, pre-existing conditions, and vulnerabilities, manualized interventions for single disorders will at best, address only one piece of a very complex symptom presentation. Much of the research in the existing literature has documented the extra challenge of addressing the needs of many patients presenting for psychological treatment after auto accidents with very complex treatment needs. As a result, some of the literature on poly-trauma, multi-symptom presentations following traumatic injuries and events may be more applicable in determining how to sequence rehabilitation in multiple domains.

Pain Treatment Literature

Many reviews and meta-analyses have noted the effectiveness of cognitive and behavioural interventions for chronic pain (Chou et al, 2009a & b), including the cost-effectiveness of these interventions when included in a multi-disciplinary approach (Flor, Fydrich, and Turk, 1992). The relative efficacy and cost-effectiveness of these interventions is especially positive when compared to results for medical interventions and medications, which tend not to have the same evidence base or to produce similar positive results (see Chou et al, 2009a and b for comparisons of results). However, we caution that most of the research conducted on chronic pain samples has included primarily low back pain, and often purposely excludes neck pain (e.g. all whiplash injuries), as well as potential participants who are engaged in litigation or seeking compensation. We therefore must be cautious about generalizing these results to a specific patient who has been injured in an MVA and is suffering with multiple sources of pain, including possible neck pain due to whiplash.

For instance, Cochrane reviews of biopsychosocial rehabilitation for neck and shoulder pain (Karjalainen et al, 2003a) and for subacute back pain (Karjalainen et al., 2003b) found very few high quality studies to include. Especially noted is the fact that reviews and meta-analyses of provision for chronic pain conditions that reported positive results did not necessarily include injuries in the subacute stage or neck/shoulder pain. Unfortunately, the reviews specifically exclude studies of injuries due to acute trauma, which would rule out MVA-related injuries. With regard to multidisciplinary treatment of neck and shoulder pain, the authors of this review did not find that multidisciplinary care was more effective than treatment as usual. However, they did conclude, based on the findings of one study, that there is limited support for the role of psychologist as advisor to the other health professionals of a multidisciplinary team for chronic neck and shoulder pain, compared to giving direct care to the patient; in this case, clinical outcomes were similar while costs were lower when psychologists were in the supervisory role. Otherwise, multidisciplinary care was noted to be very expensive to provide, and not always producing positive results. There was not enough information on multidisciplinary care for subacute pain for the authors to reach any meaningful conclusions. We therefore must again caution against generalizing findings based on the value of multidisciplinary care for chronic low back pain to other pain conditions, especially those due to injuries sustained in MVAs.

With regard to one of the most common post-MVA injuries, Barnsley (2004) reviews evidence suggesting that psychological distress associated with whiplash is generally secondary to pain and limitations in functioning, and that relief of pain brings resolution of distress. He also notes in this review that a significant body of research shows that such distress is difficult to fake, suggesting that whiplash suffering is genuine. He further reports on the shortcomings of studies purporting that compensation plays a role in development and maintenance of chronic whiplash, and documents research demonstrating persisting impairments in 25% of participants over 15 years. The relative lack of research available on

effective treatments for acute WAD is noted. As a result, the author concludes that psychological distress associated with WAD is real, secondary to the effects of the injury, and persisting in a significant minority of those diagnosed, but that few well-validated treatment options are available.

Wallis, Lord, and Bogduk (1997) conducted a double-blind, placebo-controlled RCT study of radiofrequency neurotomy on 24 individuals with neck pain due to whiplash persisting at least 3 months who had exhausted conventional medical resources. Patients were assessed pre-treatment and at 3 months post-treatment. The authors found that 6/9 patients who received active treatment met study criteria for “pain-free” status at 3 months. All of these also achieved resolution of previously noted psychological distress. This compared to only 3/8 who received placebo and were similarly pain-free with resolution of distress at 3 months. The authors noted that all participants who were pain-free, regardless of condition, reported resolution of distress. Only 1/17 participants achieved resolution of psychological distress without achieving pain-free status. When pain recurred over time, so did the emotional distress; re-administration of the treatment again resolved both the pain and the distress. Of note, no participants received psychological interventions. We conclude from this that psychological distress for most patients with whiplash may be a secondary consequence to the pain; if the pain can be resolved, there is no need for psychological intervention.

Similarly, Sterling and colleagues (2003) found that participants with moderate/ severe self-reported neck disability at 6 months showed lower pain pressure thresholds (PPT) at all sites when compared with asymptomatic controls and whiplash participants who recovered or reported mild pain and disability at 6 months. This remained true at each assessment point. The authors noted that recovered and mild pain groups at 6 months showed lower PPT at cervical spine points only on initial assessment, and that no differences from asymptomatic controls were noted by 2 months post-injury. General psychological distress was noted to be above the cutoff for clinical concern at the initial assessment point among those who were later in the mild and moderate/ severe disabled groups at 6 months. Although scores for both groups improved over time, distress remained above the cutoff at 6 months for those in the moderate/ severe group, while those in the mild group returned to below the cutoff by the 6 month point. No interactions in analyses were noted, and effect sizes for psychological distress on sensory function and sympathetic nervous system activity were found to be small. The authors concluded that these results provide evidence that presence of generalized sensory hypersensitivity may differentiate those who develop persisting moderate/ severe impairments from those who recover. They note that results were apparent within a month of the injury, were independent of psychological distress, and did not change over the course of 6 months. Participants with moderate/ severe symptoms at 6 months were differentiated from those who recovered by their initial levels of generalized hypersensitivity, including widespread mechanical and thermal hyperalgesia, and reduced elbow extension and higher pain ratings on brachial plexus provocation testing. These results suggest that psychological distress is a consequence of pain and disability, rather than the other way around. Results suggest that central hypersensitivity is independent of psychological factors, and that early intervention to prevent acute pain from becoming chronic should target those at risk with appropriate early pharmaceutical pain management approaches.

Depression Treatment Literature

New guidelines for the treatment of depression were published in November 2009. These guidelines review the literature on various treatment interventions, and reinforce the importance of psychological therapies in effective management of depression.

Current Canadian guidelines for the treatment of depression recommend a disease management approach as follows, “Disease management for depression typically includes several elements: (1) active efforts to detect depression using screening questions or rating scales, (2) delivery of evidence-based care, including both antidepressant medications and psychotherapy (3), case-management in a collaborative context with ‘stepped’ care options, (4) patient education about depression and (5) process measurement

such as monitoring of the timeliness and quality of care in addition to measurement of symptomatic outcome in patients” (Patten et al, 2009, pp. S10-S11).

The authors of these guidelines describe further that, “The aim of acute treatment is to eliminate symptoms of depression and restore psychosocial functioning. The aim of maintenance treatment is to ensure a return to baseline function and quality of life and to prevent recurrence of symptoms” (p. S11).

In keeping with this, they also distinguish between response and remission, stating,

The target goal for acute treatment should be remission: a resolution of depressive symptoms. ‘Response’ to treatment (a reduction in symptom levels) is not an adequate outcome because residual depressive symptoms are risk factors for relapse and negative predictors of long-term outcome... The goals of this maintenance phase include resolving residual symptoms, treating comorbid conditions, returning to full pre-morbid functioning and preventing return of symptoms. Clinicians should focus on healthy life strategies, personality vulnerabilities, long-term self-management and clinical strategies to reduce recurrence. (p. S11)

These authors also note the importance of maintaining clear communication in collaborative care when attempting to manage depressive symptoms together with other providers (e.g. family physicians).

In their review of the depression treatment literature, Parikh et al (2009) found that, Evidence from 85 randomized controlled trials (RCTs) since 1977 provides empirical support for CBT’s efficacy in treating MDD (mild to moderate in severity), with the modal finding being one of relative equivalence to antidepressant medication (effect size 0.38) for the acute phase episode and superiority over control conditions (effect size 0.82 against placebo and wait-list controls)... Treatment of more severely (but non-psychotic) depressed patients, with two studies finding no difference between CBT and anti-depressant medication... For patients who switched to CBT there were no significant differences in remission rates and fewer side effects compared to switching to a different antidepressant, although the mean time to remission was approximately 3 weeks longer with CBT than with medication. (p.S17)

Based on the research they reviewed, these authors concluded that several psychological therapies (CBT, Interpersonal Behavioural Activation) produce equivalent treatment effects to pharmacotherapy and therefore are considered first treatments for acute MDD. They also recommended several therapies for the maintenance phase of treatment, and in particular note the lower rates of relapse in groups treated with psychological therapies.

The authors also reviewed the literature on combining psychological therapies with pharmacotherapy and concluded that “combined treatment is superior to pharmacotherapy alone, and these effects are more pronounced in relapse prevention than in symptom relief in acute treatment (6-8 weeks” (p.S23). They also noted that the superiority of this combination increases when studies involved treatment of specific populations, such as the elderly. However, we note that results from a recent meta-analysis of FDA clinical trials for multiple antidepressants (Kirsch et al, 2008) suggest that positive results in medication treatment effectiveness studies have largely been due to clinically significant effects above the placebo response only at the most severe levels of depression. Consistent with this view, Dobson et al (2008) suggest that, “Antidepressant medication (ADM) has been shown to prevent the return of symptoms associated with major depression for as long as it is continued or maintained. However, there is little evidence that having taken medication does anything to alter the risk factors that lead to subsequent relapse and recurrence, and most patients with chronic or recurrent depression are encouraged to stay on medication indefinitely” (p.469).

Identification and treatment of Acute Stress Disorder – Prevention of PTSD

More recent work has been done on treatment of ASD, and attempts to prevent PTSD. Two studies have shown no difference on the immediate effects of single-session debriefing on PTSD symptoms, but 3-year follow-up showed deterioration in the group that had received the debriefing intervention. Based on this information, many researchers and clinicians have concluded that debriefing interventions are contraindicated as an early intervention for potentially traumatized individuals (See Bryant, 2008 for a review).

In one study of MVA and industrial accident survivors with ASD, Bryant and colleagues (1998) found that 5 sessions of CBT were more effective in preventing PTSD than supportive counseling (SC); 8% of the CBT group versus 83% of SC group were later diagnosed with PTSD. In another study, that dismantled the components of CBT, 45 civilian trauma survivors with ASD were again received either five sessions of (a) CBT (prolonged exposure, cognitive therapy, anxiety management), (b) prolonged exposure combined with cognitive therapy, or (c) SC (Bryant et al, 1999). This study found that 6 months later, fewer patients had developed PTSD after prolonged exposure (14%) and CBT (20%) than supportive counselling (67%). These gains were found to be maintained up to 4 years post-MVA in subsequent follow up studies, with those who had received CBT continuing to report lower rates of PTSD (Bryant et al., 2003).

Following on this early work, Bryant and colleagues (2005) found that while participants who received CBT reported fewer intrusive thoughts after treatment than those who received supportive counselling, participants who received CBT+hypnosis reported even fewer intrusions than participants who received CBT alone or supportive counselling. The hypnosis component in this intervention was provided just prior to imaginal exposures in order to facilitate potential emotional processing of the traumatic memories. Participants in the CBT and CBT+hypnosis groups also scored lower on measures of general anxiety, intrusive thoughts, avoidance, and total posttraumatic stress symptom intensity than those receiving supportive counselling. Post-treatment, more participants in the supportive counselling group still met criteria for PTSD (46%) than in the CBT (13%) or CBT+hypnosis group (9%). Results were similar at 6-month follow-up, with 57% of participants in the supportive counselling group still meeting criteria for PTSD, while 21% of those in the CBT group, and 22% of those in the CBT+hypnosis group still met criteria. Post-treatment, participants who received the CBT+hypnosis intervention produced larger effect sizes than participants who received CBT alone, who in turn, produced larger effect sizes than participants who received supportive counselling. At 6-month follow-up, participants in the hypnosis+CBT and CBT alone groups produced larger effect sizes than those in the supportive counselling group. A 3-year follow-up of this study found that the treatment gains were maintained over time for people receiving CBT (Bryant et al., 2005). However, the authors also reported that, “the attrition rate from the CBT groups was approximately 3 times that of the supportive counselling group” (p.339), and noted the importance of finding ways to encourage and improve completion of treatment interventions that have proven effectiveness in reducing PTSD symptoms.

Blanchard and Hickling (1997) found similar results with their multiple session cognitive-behavioural intervention for MVA-related acute stress. They also identified persons at risk for developing PTSD, and administered their treatment intervention early, to see if PTSD could be prevented. The authors concluded that treatment administered early to those at increased risk was effective in preventing later PTSD for many of their participants.

Finally, CBT and supportive care were tested in a small sample of participants (N=24) with co-occurring ASD and mTBI, who had lost consciousness during an MVA (Bryant et al., 2003). Again, fewer participants receiving CBT (8%) met criteria for PTSD at 6 months than those receiving SC (58%). However, the authors also noted that reduced ASD symptoms were associated with reduced post-concussive symptoms, suggesting a potential additional benefit for people with mild TBI.

Treatment of PTSD

If ASD is not treated and PTSD is not prevented, treatment for full PTSD should proceed. Several studies have identified successful treatments for MVA-related PTSD.

The first controlled trial of psychological treatment for PTSD post-MVA was conducted in Canada by Fecteau and Nicki (1999). Twenty people were assigned to treatment or assessment only. Treatment involved 2 hour sessions of psychoeducation, relaxation training, repeated exposure to an audiotaped description of the MVA, cognitive reappraisal training, and a small amount of in vivo exposure. The authors found that 40% of participants who received cognitive behavior therapy (CBT) showed reduced or fully remitted symptoms after therapy; there was no change for those in the assessment-only condition. Results were maintained at 3 and 6 months.

Further work at UBC by Taylor et al. (2001) reported a similar response rate (44%) in an uncontrolled study. This study noted the particular difficulties of treating patients with multiple physical and psychological impairments, and identified factors associated with poor outcome, including co-existing PTSD and depression, higher pain severity, and greater overall impairments in functioning.

Building on these Canadian studies, recent work in the U.S. and U.K. indicates that structured psychological intervention using CBT principles is associated with much higher improvement rates than other interventions, including self-help, supportive therapy, and assessment only (although these are noted to have beneficial effects relative to no-treatment) (Blanchard & Hickling, 2004).

Blanchard and Hickling (2004) studied cognitive-behavioural treatment interventions for PTSD with an individualized approach that allows varying emphasis on specific interventions, depending on the individual patient's needs. This treatment was found to be more successful at reducing post-traumatic stress symptoms than a wait list control. The authors also note that the skills learned appeared to generalize, such that they also saw decreases in rates of depression and Generalized Anxiety Disorder. Maercker et al. (2006) translated Blanchard and Hickling's approach and added more cognitive therapy interventions. Similar results were reached, with significant reductions in PTSD symptoms, greater than wait-list control. Beck and Coffey took the Blanchard and Hickling approach and developed a group treatment that has shown similar success. Preliminary results indicated that 88% of patients no longer met criteria immediately after treatment, compared to 31% who received a minimal-contact control condition (Beck and Coffey, 2007).

By contrast, Ehlers et al (2003) used strictly cognitive techniques within 6 months of the MVA and found reduced rates of PTSD in their group (79%) relative to those who used a self-help book (24%) or repeat assessment alone (30%). Supportive psychotherapy (normalizing, processing losses, general problem-solving skills, unconditional support) has also been shown to be better than no treatment, with success rates in reducing PTSD symptoms in 40-48% of samples (see Bryant, 2008 for a review).

In a very comprehensive and recent dismantling study, Bryant and colleagues (2008) found no differences between participants who received Imaginal Exposure (IE) only, In-Vivo Exposure (IVE) only, or combinations of IE and IVE, or IE and IVE with Cognitive Restructuring (CR) immediately post-treatment. However, at 6-month follow-up, fewer patients had PTSD in the IE/IVE/CR combination group than in the other groups. Participants in this group scored lower on measures of intrusions, avoidance, depression, and catastrophic cognitions than those in each of the other groups. They also showed greater gains in all areas measured, with more participants from this group achieved high end functioning, and clinically significant levels of change than in the other groups.

Although results from this study suggest that the best treatment is a combination of each of these, in longer treatment sessions to allow for greater exposure and discussion and restructuring of cognitive appraisals, analysis of treatment completers revealed that dropouts had higher scores on the Clinician Administered Post-traumatic stress Scale, suggesting that approaching this kind of exposure work may have been quite threatening for those with the most impairments. It is also noted that less than half of the

responders (46%) in the most successful group actually attained high end state functioning, and that 35% still met criteria for PTSD in this group 6 months later. While this is a significant improvement over the rates achieved in the other groups (IE: 63%, IVE: 65%, IE/IVE: 59%), it nevertheless demonstrates that a significant minority still meets diagnostic criteria for PTSD, even after the best intervention available. The authors also do not mention the percentage of participants who continue to have subclinical symptoms that impair their functioning, even if they no longer meet full criteria for PTSD (e.g. still have driving phobia symptoms that limit their ability to travel comfortably).

In regards to children and adolescents, research has demonstrated that trauma-focused CBT results in significant improvement, and that there is only minimal evidence suggesting a benefit of adding a selective serotonin reuptake inhibitor. It was noted that evidence supports psychotherapy in the form of trauma focused CBT or other evidence-supported therapies for treating PTSD symptoms in children prior to the addition of medication (Cohen, Mannarino, Perel & Staron, 2007). A study conducted by Lowenstein (2001) found that the severity of PTSD was related to the child's perception of the accident as having been life-threatening, rather than to the type of accident or severity of injuries, and that CBT should be used as treatment.

Special considerations in planning treatment for post-traumatic stress

All researchers in this area note the considerable variability in symptom presentation and patient need in their samples, and the resulting need for adequate assessment and treatment capability in their clinicians. They note the multiple impairments to be addressed (e.g. pain, depression, post-traumatic stress symptoms, sleep disturbance, mild traumatic brain injury and cognitive impairments, relationship distress, and limitations in functioning), and the resulting extreme variability in treatment frequency and duration required (e.g. Blanchard & Hickling, 2004; Taylor, Federoff, & Koch, 1999).

Similarly, we also note the caveat presented in much of the treatment literature referring to rehabilitation of individuals presenting with multiple diagnoses and impairments in functioning: that even very straightforward treatment modules (e.g. exposure for post-traumatic stress) must be individualized and delivered sensitively, according to patient need. Many authors have noted the high dropout rate for manualized, single disorder-specific cognitive and behavioural interventions that are nevertheless effective for those patients who are able to complete the program. Many have also noted the varying results achieved that is often dependent on factors associated with patient presentation (e.g. presence of mTBI, pain, and PTSD).

For instance, as has been noted, patients with both debilitating pain and post-traumatic psychological stress reactions to a motor vehicle accident present with very challenging and complex clinical situations. These patients typically have more impairments and more functional limitations than patients with many other psychological diagnoses. It has been noted that the pain, physical functional limitations, and traumatic stress symptoms often seem to potentiate each other making it necessary to address each of the impairments because of their interaction (Geisser, et al., 1996). But, several authors also report their observations from treatment that although pain and PTSD seem synergistic, treatment effects do not seem to generalize between them, and different interventions are required for each (Blanchard et al, 2003).

The authors of several of these studies have noted that although pain did not interfere with patients' ability to attend, participate in, or benefit from treatment for PTSD, it did affect how treatment was delivered (e.g. use of more cognitive techniques, need to stand during treatment sessions). As one notes, Cognitive-behavioral interventions targeting pain likely will need to address these emotional and cognitive issues concurrently with particular attention being given to those conditions that may aggravate pain (e.g., PTSD, depression) or impede rehabilitation (e.g., cognitive deficits, substance abuse). While pain, emotional disorders, and cognitive impairments may be treated independently, all need to be addressed during rehabilitation in order to achieve optimal long-term functional outcomes. When PTSD is present or suspected, it is particularly

important to identify pain sensations that trigger recall and re-experiencing of the traumatic event and traumatic memories that exacerbate pain during rehabilitation efforts. Occasionally, specific pain treatments that temporarily increase pain... unexpectedly trigger strong emotional reactions due to the pain-trauma association. (p.250)

Regarding attempting treatment of both pain and post-traumatic stress, Bryant (2008) also cautions that, It is important to consider the patient's capacity to engage in therapy when there is significant pain present... Both exposure and cognitive therapy requires the patient to engage their attention for sustained periods of time. Accordingly, there is a need to carefully assess the capacity for the patient to focus attention during therapy sessions and during periods when homework activities are administered. Some patients may require careful pain management before they can commence with CBT for their ASD...As noted by Sharp and Harvey (2001), pain can function as a trigger to trauma reminders of the pain was initially perceived during the injuries sustained at the time of the MVC. Pain can also be a re-experiencing symptom itself that can be triggered by other cues. Further, the pain itself can trigger memories of pain that can contribute to further distressing memories and painful states. This complex interaction between pain and re-experiencing symptoms highlights the need to carefully assess the extent to which the pain is managed and the ways that it can reinstate distressing emotional states in the patient. (pp. 121-122)

Brenner, Vanderploeg, and Terrio (2009) note the difficulty of assessing and treating individuals with multiple, overlapping diagnoses, conditions, and impairments. In particular, the authors note the significant overlap in symptoms of PTSD and mTBI presentations months after a traumatic event, and the dearth of evidence based treatments for co-occurring TBI and PTSD reflected in Soo & Tate, 2007 Cochrane review. With regard to treatment of patients with co-occurring post-traumatic stress symptoms and mTBI, Vanderploeg et al (2009) found that those who had sustained an mTBI had much lower rates of recovery from PTSD and worse long-term health outcomes than those without mTBI. Following patients over 16 years, they found that approximately 69% without mTBI recovered eventually from PTSD, while only 48% of those with mTBI recovered.

Accordingly, Bryant (2008) cautions that,

Patients with MTBI may also have other problems that will potentially impede treatment. They are prone to develop a range of physical complaints, including chronic pain. These comorbid difficulties associated with TBI can contribute to poor posttraumatic adjustment and higher prevalence of ASD. Further, the cognitive deficits that are often evident following MTBI may be compounded by the attention and memory deficits associated with ASD. The cognitive deficits that result from the combined effects of TBI and posttraumatic anxiety can impede effective treatment. Therapists often need to structure treatment carefully by providing clients with detailed homework exercises, assisting attentional focus on exposure exercises, simplifying cognitive therapy techniques, and ensuring that all therapy tasks are written in a format that can prompt client adherence to treatment tasks between sessions... (pp. 121-122).

Without appropriate psychological assessment and treatment, this group of accident victims is at high risk of chronic impairments and continuing disability. As a result, treatment of this group of patients is often more intensive and requires longer duration than that for patients presenting with only chronic pain or post-traumatic symptoms alone (Blanchard, et al., 2003).

In keeping with this, Bryant (2008) also has presented a list of common presentations that he suggests necessitates interruption, postponement, or prolongation of effective treatment interventions for post-traumatic stress, including: the presence of strong dissociative and avoidant responses (“consider stabilizing the acute reaction prior to more direct therapeutic intervention... exposure-based treatment in the acute phase may exacerbate, rather than alleviate, their distress”) (p.116); anger (“People who present with anger as the primary emotional response may benefit more from anger management strategies, including anxiety management and cognitive therapy techniques” (p. 117); grief (“it can be more helpful to provide cognitive therapy that assists with the grieving process than to proceed with exposure” p.117); pre-existing disorders that may be exacerbated by MVA-related distress and demands (“Caution is required with these people, and it is often wiser to offer support to contain their pre-existing disorder than to resolve their traumatic experience in the acute phase” (p.117); substance abuse (“If an individual presents with marked substance abuse in the acute phase, it may be wiser to delay exposure-based therapy for some time” (p.117); and, serious suicidal ideation (“seriously suicidal people should have their depression and suicide managed, and acute stress reactions can be addressed after these immediate problems are addressed” p.117).

In terms of pre-existing conditions that can be exacerbated by an MVA, the presence of previous trauma, in particular complex trauma is especially important to note. Duckworth (2008) refers to Courtois (2004) and Van der Kolk et al (2005) in supporting the need to recognize complex trauma as distinctly different and requiring additional resources, even though this is not currently a separate diagnostic category. For example, clients with histories of childhood sexual abuse are acknowledged as more complex, given that such abuse may have been recurrent and often interferes with normal development. And, greater exposure to childhood traumas has been shown statistically to predict higher occurrence of physical and mental health problems, and as a result, greater use of health care services over time (Felitti, et al. 1998; Schnurr, et al., 2000). However, Duckworth (2008) also notes that when conceptualizing the patient’s current combination of post-traumatic stress symptoms and how to approach assessment and treatment, “in general, pre-collision traumas should not be given more etiological importance than peri-collision factors or post-collision changes in physical and psychological functioning” (p.320) even though the presence of pre-MVA trauma complicates the presentation and necessitates longer treatment.

Finally, Bryant (2008) also notes that the rehabilitation process itself may bring so many stressors to bear on the affected individual’s life that postponing treatment altogether may sometimes be indicated:

Many MVC survivors experience marked stressors in the initial period after trauma exposure. Severe pain, surgery, financial loss, criminal investigations, interpersonal breakdown, and interruption to occupational activities are some of the stresses that can occur in the initial aftermath of an MVC. In the context of ongoing stressors, providing active therapy can represent an additional burden to some individuals and this can compound their adjustment difficulties... they may not have sufficient resources to allocate to therapy, if they have other excessive demands on them... Attempting exposure may burden them with additional distress at a time when they require all available energy for managing their medical condition. (p.118)

Bryant (2008) also notes that,

There are important limitations of the evidence for the use of CBT... a significant proportion of participants do drop out of treatment. For example, 20% of participants dropped out of both the Bryant, et al (1999) and Bryant et al (2005) studies... early provision of CBT after an MVC is not a panacea for all people. A proportion of MVC survivors will fare better if they are provided with support or medication in the acute phase after the MVC, and provided with more active CBT at a later stage after the acute phase has passed... It may be better to delay active CBT for a week or several weeks after an MVC if it will result in the individual having more resources to allocate to therapy. Treating people several weeks after trauma (a) allows the individual additional time to muster their resources that can be allocated to therapy (b) decreases the likelihood of presenting symptoms being transient reactions to the trauma, and (c) increases the opportunity for the immediate problems associated with the MVC to have settled. (p.118)

Treatment Guidelines

In order to make recommendations regarding the duration, number of sessions, and associated costs for treatment of MVA victims, information from empirically-supported workbooks and the treatment research literature described above is included here. This review is limited to the most common presentations seen by psychologists after an MVA: pain, depression, and post-traumatic stress, and those studies and workbooks that include information on duration and number of sessions. Users of these guidelines are directed to be mindful of the significant caveats noted by researchers above that affect the applicability of recommendations made here. We also note that there is no particular treatment literature for grief, post-traumatic depression, or cognitive rehabilitation that speaks to treatment duration, number of sessions, etc.

Popular workbooks and treatment manuals for treatment of single conditions such as MVA-related PTSD, chronic pain, or uncomplicated mild to moderate depression recommend approximately 8-12 sessions guided by a therapist, with additional follow-up as needed (Caudill, 2002; Greenberger & Padesky, 1995; Hickling & Blanchard, 2006).

General guidelines for more serious cases of depression suggest 15-20 weekly sessions, with some clients requiring more frequent meetings for the initial 4-5 weeks. Also recommended are “a tapering off process” toward the end of therapy, and availability of an additional 4-5 “booster” sessions after termination (Sacco & Beck, 1995). Similarly, recent treatment guidelines for Interpersonal therapy suggest at least 16 sessions to treat uncomplicated cases of depression, and indefinite monthly “maintenance” sessions once symptom relief has been accomplished are recommended for clients with a history of multiple depressive episodes who are at increased risk for future episodes (Gillies, 2002).

With regard to PTSD that is not specific to MVAs, Resick et al (1988) achieved significant symptom reduction following 12 (2 hour) group sessions of mixed therapies, for a total of 24 treatment hours, while an early study of prolonged exposure therapy for PTSD after a sexual assault produced favourable results after 9 twice-weekly sessions, (Foa, et al., 1991; Foa & Meadows, 1997).

Marks et al (1998) produced favourable results after 10 sessions with a group of participants with post-traumatic symptoms due to mixed causes, and a case study presented in a recent anxiety text on treatment for PTSD suggest that 12 sessions with follow-up may be satisfactory to produce desired results for uncomplicated cases (Resick & Calhoun, 2001).

The majority of the treatment literature that is specific to MVA and presents information on number and duration of sessions has to do with intervention for post-traumatic stress.

Blanchard and Hickling's (1997) early, uncontrolled studies of their manualized intervention of 9-12 individual sessions targeting PTSD symptoms among MVA survivors produced clinically and statistically significant improvements in post-traumatic symptoms. However, the authors reported that the number of treatment sessions used over a 12-month period varied widely, up to 39 sessions, and that many participants required treatment for issues outside of the manualized intervention. As a result, they suggested that treatment requiring greater than one year targeting only the post-traumatic stress symptoms was not uncommon. They also indicated that although on balance the intervention worked well for targeted PTSD symptoms, it did not affect many concurrent problems, such as worry and depression, and often did not completely eradicate all post-traumatic symptomatology, so that many participants were left with residual symptoms. As a result, a subset of participants required referral for additional treatment at the end of the intervention. In order to address this, the authors suggested that "longer treatment might have been of benefit, particularly if co-morbid conditions or limited but significant symptoms of PTSD persisted" (p. 300).

In their controlled treatment study, Fectau and Nicki (1999) produced improvements that were better than no treatment after 4 two-hour sessions of CBT; however, this intervention only resulted in significant symptom reduction for 8 out of 20 (40%) participants. While this speaks to the utility of CBT in reducing and alleviating symptoms of MVA-related PTSD, it also suggests that 8 hours of intensive treatment was not enough to produce the same effect in the majority of participants.

Similarly, while 12 similar installments of weekly group sessions produced favourable results for some patients, (Taylor, Federoff, & Koch, 1999), the therapists participating in this study indicated that maintaining treatment for PTSD symptoms alone was often complicated by other stressors associated with the MVA. As a result, the authors suggested that, "It may be useful to extend the duration of treatment to permit more time for generic stress-management training". (p. 372).

A similar treatment intervention involving 12 sessions with 2 therapists, followed by therapist debriefing after each session demonstrated significant reductions in posttraumatic symptomatology, but did not address pain and depression. As a result, these authors also suggested "outcome might be improved by increasing the duration of therapy, particularly by including interventions that focus on depression and chronic pain" (p.550; Taylor, et al., 2001).

With regard to use of their current manualized treatment intervention, Blanchard and Hickling (2004) have reported that 8-12 exposure-based sessions are used, with most participants needing 10 sessions to achieve clinically significant symptom reduction, such that they no longer meet full criteria for PTSD. Using a translated version of the same manual and some additional cognitive interventions, Maercker et al (2006) produced similar results in an average of 11.4 (SD = 3.2) sessions.

In general, these results indicate that a significant proportion of people with MVA-related PTSD will experience some relief and reduction in symptoms after 2 – 3 months (roughly equivalent to 8 – 12 weekly sessions) of prolonged, 2-hour intensive treatment sessions targeting post-traumatic stress symptoms. However, these results also indicate that these initial 16 – 24 hours of treatment do not address many other areas of impairment and treatment need, are sufficient only for those who can tolerate the treatment (10-20% dropout), only result in symptom reduction to subsyndromal levels (i.e. no longer meeting criteria for PTSD, but still having significant anxiety and impairment), and are insufficient for many people who require further time to achieve similar results.

These results are consistent with earlier findings indicating that although many MVA survivors with PTSD improve with therapy within approximately 3 months (equivalent to approximately 12 weekly sessions), many more also require more prolonged treatment, including sessions beyond one year that continue to treat the post traumatic stress symptoms (Burstein, 1984).

With regard to treatment of ASD and prevention of PTSD, Bryant's earlier treatment studies (1998; 2005) consisted of five 1.5-hour weekly individual sessions of CBT and exposure or CBT and exposure + hypnosis, for a total of 7.5 hours of individual treatment. Most recently, Bryant, et al (2008) found that a combination of 8 weekly 100-minute sessions of imaginal exposure with in-vivo exposure, and cognitive restructuring with specific homework instructions was superior to imaginal exposure alone, in-vivo exposure alone, or a combination of these two. Sessions focused on repeated, prolonged exposure, including imaginal and in-vivo exposure, psychoeducation, and relapse prevention, and resulted in a total of 13.3 hours of individual treatment that was better than previously achieved using the shorter duration and session time.

With regard specifically to number and duration of sessions required to produce significant change, the authors of this study note, "Although most published treatment studies [for ASD] have employed five or six therapy sessions of 1 ½ - 2 hours, additional sessions may be required if the individual displays some clinical gains from the therapy but has not achieved adequate recovery or ongoing stresses are impeding recovery and the individual would benefit from additional therapy. Therapy typically occurs on a weekly basis but this may be modified for a number of reasons" (Bryant et al, 2008, p.118).

In addition to the caveats noted above, the authors of research in this area have tended to be mindful of the fact that the studies operate largely under controlled conditions with participants selected based on certain criteria (e.g. PTSD as primary diagnosis). As yet, there are few studies of treatment effectiveness, using uncontrolled procedures in real-life clinic settings. Effectiveness studies for treatment of PTSD in particular have been called for (Keane & Barlow, 2002). Similarly, although the efficacy of psychological interventions for pain management has been demonstrated under well-controlled conditions (e.g. Johannson, et al, 1998; Turner & Jensen, 1993), effectiveness studies in real-life clinics where fewer controls are in place indicate that, although such interventions are associated with reduced rates of pain, depression, and disability, most clients do not show improvements in all three areas if treatment is brief (e.g. Slater, et al., 1997).

Taking all this in mind, psychologists should propose treatments with the above research and list of complicating/ facilitating factors in mind.

More specifically, the studies referred to above indicate that initial successful reduction of targeted symptoms for many single disorders (pain, depression, ASD, PTSD) generally can be obtained in 5 (ASD) – 25 (moderate depression) sessions; if hours of session time as indicated in the literature are considered, this would translate into approximately 7.5 to 25 treatment hours for an initial treatment plan that targets symptoms of a single disorder.

We must also note that the treatment literature for treatment of post-traumatic stress seems to indicate that while five to eight 1.5 – 2 hour sessions are sufficient for some people to reduce ASD symptoms and prevent PTSD; if these are not identified and treated within the acute window, often even the 16 – 24 hours of prolonged treatment that is required to produce symptom reduction to subsyndromal levels in most people will not be enough for a large proportion of people with more complicated presentations. These results speak both to the need for early identification and treatment of those injured people showing early post-traumatic stress symptoms in the first 3 months post-MVA, and to the need for significant flexibility and individualization in treatment planning to meet patient need and address comorbid conditions.

Within this, those with fewer complicating factors (see Table 5 of the Guideline document) would be expected to fall at the low end of treatment sessions required; for example, within the 8-18 sessions that the research shows is effective at providing relief from single, uncomplicated diagnoses. In contrast, treatment of clients with more complicating factors would be expected to fall at the high end of this scale (18 – 40 weekly sessions or more) and require longer duration in order to achieve significant results reduction of impairments and restoration of functioning. The research is also clear in indicating that a

sub-sample of patients with continuing impairments may require further treatment after completing an initial course of treatment of up to 40 weeks. Treatment research, workbooks, and guidelines are clear in indicating that more complicated presentations involving co-occurring physical injuries, mood/anxiety symptoms, and limitations in functioning (a common presentation for people injured in MVAs) are much more difficult to treat, and require much more time, intervention, and individually-tailored treatments, relapse prevention, and follow-up.

As a result, some researchers have recommended taking a stepped care approach to treatment and rehabilitation of patients presenting with multiple injuries, diagnoses, and areas of impairment. For example, Brenner, Vanderploeg, and Terrio (2009) recommend a stepped and blended approach to assessment and treatment where multiple symptoms and conditions overlap. Interventions in the first stage involve provision of information and the reassurance regarding the expectation of recovery that should be conveyed to patients and their families. At the same time, clinicians should be assessing and treating psychiatric symptoms, such as PTSD and depression, regardless of why or how these are present (e.g. causation), since they present barriers to engaging appropriately and benefitting fully from other rehabilitative efforts (e.g. adherence to medications, participation in physical rehabilitation). Next steps include attending to somatic complaints, such as pain and headaches and improving self-care, such as sleeping and eating routines. Interventions focusing on cognitive symptoms (e.g., memory loss and attentional deficits) are not generally initiated until these areas have been addressed first. The importance of monitoring symptoms and returning to reinforce recommended interventions is emphasized as inherent to the process and required for successful rehabilitation. The authors also note the natural backward and forward trajectory of progress made as patients progress through such modules or stages of care, and the extra time required for assessment of ongoing needs, modification of treatment, addition of reinforcement and relapse prevention for previously learned skills, and booster sessions and additional support after discharge.

Girondon, et al (2009) also describe difficulties associated with trying to access effective treatment for all conditions after someone has been traumatized, has painful physical injuries, and TBI with cognitive impairments. They note that since treatments for PTSD, chronic pain, and mTBI are often delivered through different, specialized programs, it can be challenging to ensure adequate, coordinated, appropriate care. They also note that if subsyndromal, but significantly disabling symptoms or comorbid conditions are present, these often will prevent an injured person from meeting the normally strict criteria required for entry into these specialty treatment settings. Additionally, an untreated comorbid condition can present a barrier to the injured person's ability to benefit fully from even the best treatment delivered in the most specialized settings. "Unfortunately, almost nothing is known about the long-term course of pain conditions associated with polytrauma, and the current state of the art requires reliance on evidence-based practice guidelines developed for general pain populations" (p.256). The authors further note the inadequate rehabilitation that is provided under such conditions, and suggest that, "innovative, integrated treatment programs will be required to address this complex clinical presentation" (p.255).

As a result, most evidence-based clinical opinion in this area recommends comprehensive assessment and individually-tailored interventions, with treatment decisions made on a case-by-case basis and modified through ongoing evaluation. The need to tailor evidence-based interventions to the individual situation is further articulated by Beutler and Harwood (2000) who recommend identifying ways to accommodate client differences in level of distress/ impairment, coping styles, resistance states/ traits, as well as differences in therapeutic relationship variables, in order to strengthen the ongoing informative and intertwining processes of assessment and intervention: "The informed clinician is one who can recognize and use clinically important and empirically derived client qualities to initially plan a discriminating and differential treatment, with subsequent periodic reassessments and alterations of these plans to accommodate changes in the client's status" (Beutler & Harwood, 2000, p. vii).

We note that these Guidelines do not address treatment intensity and duration for children and adolescents.

TREATMENT INTERVENTIONS

In keeping with the above information, treatment is evidence-based where applicable evidence exists to support the use of a particular intervention; otherwise psychologists use a reasonable approach. When more than one type of psychological treatment is proposed, the rationale for each type of intervention should be provided in the report (all interventions utilized are described within the language of the Canadian Classification of Interventions (CCI) and an associated intervention code is provided). However, if couple, family, or parenting sessions are indicated, it is also possible to submit these under a claim for the non-injured family member.

Frequency and duration of sessions within the total number of hours in the Guideline is to be determined by the individual treating psychologist according to the specific needs of the patient and may vary over the course of the treatment plan. However, we note from the current treatment literature the varying time requirements for administering effective treatments. While teaching general stress management may be achievable within a traditional 50-minute hour, the current standard for treatment of post-traumatic stress is 1.5 – 2 hour sessions (or longer), and we note that the literature on relapse prevention and provision of booster sessions generally allocates time on an as-needed basis.

We note that our mandate within the SABS is to return injured people to their pre-MVA level of functioning (or, as close as possible to this), not simply reduce symptoms or distress. Psychologists must be aware that treatment to symptom remission does not necessarily result in a return to functioning. Therefore, while the literature cited above focuses on treatment of symptoms and disorders, we also must emphasize interventions that focus on improving functioning, returning to previous activity, and reducing and preventing disability. Several kinds of psychological rehabilitation services have not been reviewed here, including parenting skill training, cognitive rehabilitation for brain injuries, and vocational rehabilitation for those who are unable to return to their previous employment. Times required for such services necessarily also fall outside of those proposed and this Guideline. The fact that these interventions are not included within the scope of this Guideline should not be taken to mean that these kinds of rehabilitation are not supported by the literature or recommended by the OPA. Rather, they were simply outside the scope of this review. It should be recognized by users of this Guideline that any additional interventions of these kinds will require extra time to implement.

Note that, as reported by several researchers, treatment/rehabilitation in multiple domains is not expected to proceed in a straightforward, linear fashion; rather, it often involves improvements and lapses as treatment proceeds through stages/ modules. As a result, delivery requires flexibility and the ability to move between modules, as needed.

Review of External File Information as Received

During the course of therapy, new documents and reports often will be completed on the patient that are relevant to treatment (e.g. medical reports from treating physicians, physiotherapists, chiropractors, occupational therapists, independent psychological examinations, treatment plan review reports, disability assessment reports, Functional Abilities Evaluations (FAEs), in-vivo driver re-training progress reports, etc.). In order to maintain adequate and informed treatment and appropriate continuity within the circle of care among treatment providers, these documents should be reviewed by the treating psychologist as they are received. The treatment plan therefore should include time that is anticipated to be required for review of external file information received during the course of treatment.

Consultation, Collaboration, and Communication

Ongoing consultation, collaboration, and communication with treatment providers and others (e.g. phone calls, team meetings, contact with other treatment providers, insurers, teachers, employers) is an essential component of the treatment and rehabilitation process. This ongoing communication is necessary to provide integrated treatment and avoid duplication. The communication allows multiple independent treatment providers to function as a “virtual clinic” to meet the needs of the patient in the most effective

and efficient manner. In those instances where in-person team meetings are required, the specific rationale should be described and the additional time indicated. The treatment plan includes the time that is anticipated to be required for consultation, collaboration, and communication.

Ongoing Evaluation, Formal re-Assessment, and Modification of Treatment

Because the trajectory and ultimate results of treatment can vary so greatly, regular re-assessment of functioning and progress in therapy is essential to providing effective, efficient, high quality care. All psychologists, regardless of their orientation, education, or training, should engage in regular outcome evaluation of their patients in order to determine and document progress in therapy. Such outcome evaluations to document progress and modify treatment as necessary are a critical part of the treatment process, and are to be included in the OCF-18 treatment plan, rather than requiring a separate OCF-18.

We see continuing re-assessment and modification of the treatment plan as part of the staged model of treatment. In the staged model, continuation of further treatment is determined by response to each stage of treatment. For example, while it may be anticipated that a patient with long-standing and severe impairments might require a year or longer of treatment, it would be unusual to propose this in a single treatment plan. Rather, we anticipate that treatment would be proposed in blocks or stages and continuation would be dependent upon response.

It is expected that ongoing evaluation to monitor treatment progress and modify treatment when warranted must occur as an integral component of psychological treatment and rehabilitation. Re-assessment and feedback to the client should occur every 6-10 sessions, or after a significant stage of the stepped care model. Such re-assessment is required to determine whether treatment is effective in attaining the goals set at the outset of therapy, to make any required modifications to the treatment process, and to document areas of progress for the OCF-18 treatment plan, if more treatment is being recommended.

Time to accomplish this during and at the completion of the treatment plan should be included on the treatment plan proposal. Ongoing evaluation could include for example, clinical observation, patient self report, reports from significant others and completion of satisfaction questionnaires. Formal re-assessment will require re-administration of psychological tests (If the need for additional specialized assessments, for example, psychovocational assessment, is identified, a separate OCF-18 should be submitted). This is an essential component of providing treatment, and cannot be cut from a treatment plan.

Note that standardized psychometric measures may not be appropriate for some patients and most evaluations should be augmented by other measures to evaluate functional goals. In those instances when it may be inappropriate to administer formal psychometric tests (e.g. ESL), the rationale should be stated and the alternative method of evaluation should be indicated. Psychologists should use their professional judgment, including review of the current scientific literature and should follow contemporary standards of practice when determining the best strategies for evaluating outcomes and progress in treatment.

Preparation of Progress Reports, Discharge Reports, and/or Subsequent Treatment Plans

Results of formal assessments should be communicated to the patient, other treating health professionals, and the insurer, as available, with patient consent and as consistent with current legislation (e.g. PHIPA). This is an essential component of effective, integrated care of the patient. However, while communication with other care providers, referral sources, adjusters, or others may occur in written format, feedback to the patient requires face-to-face individual discussion in order to ensure real effectiveness of the feedback for treatment. Direct discussion allows the psychologist to clarify areas of confusion, and ensure adequate understanding of the results and must be conducted if feedback is to be billed. A feedback session is a vital part of the treatment and rehabilitation process. The literature on Therapeutic Assessment is reviewed earlier in this document and applies to feedback for progress reports as much as initial assessment results. Patients are the primary recipients of their treatment plans and progress reports. In order for them to be able to use the information provided, they must understand and have an opportunity

to address any disagreements. Thus, individualized, in-office feedback of interim progress reports and applications for further treatment is critical to the rehabilitation process and should not be skipped.

Readers are also reminded of the need to obtain informed consent and the patient's signature on any OCF-18 for continued treatment. This is the time for feedback of assessment results and discussion regarding plans for further treatment. Reviewing progress on treatment to date and continuing needs is a critical component to allowing informed consent to further treatment. Therefore, it is expected that this feedback occur prior to the patient providing their signature on an OCF-18. Thus, time for preparation of progress reports, discharge reports and/or subsequent treatment plans and feedback to the client should be included in the treatment plan, and should not be cut or skipped.

Outcomes

Evaluation of the patient's progress in therapy at formal evaluation point(s) will yield information regarding whether the patient requires further psychological treatment, referral to another provider and/or whether to proceed to either discharge or submitting a plan for extension of treatment.

Consumable Goods Used in Therapy

These consumable goods are distinct from the "cost of doing business" which is absorbed by the health professional. Consumable goods and disbursements are billed on a cost-recovery basis. Examples of consumable materials and goods used in therapy include for example, workbooks and tapes for patient practice between sessions, test booklets, consumable test scoring software, and use of scoring services. It is anticipated that the consumable goods and disbursements required for a treatment plan will be billed to the insurer on a cost recovery basis. The anticipated cost of these goods and disbursements should be included in the treatment plan.

Table IX: TREATMENT GUIDELINES: Initial Clinical/Health/Rehabilitation Psychological Treatment Plans

| | | |
|---|--|---|
| Factors indicating that psychological treatment consistent with accepted community and professional standards is reasonable and necessary include that an appropriate assessment has identified: | | |
| <ul style="list-style-type: none"> • A psychological impairment/condition/disorder resulting from the accident and its sequelae, and/or psychological factors that are having an effect on the treatment/rehabilitation of physical injuries (note that these are diagnosable using ICD -10 and do not need to meet DSM-IV-TR diagnostic criteria for a particular disorder to qualify for treatment; • An effective or reasonable intervention exists; • The patient is sufficiently motivated and can access treatment (barriers addressed); • A sufficiently/appropriately qualified practitioner is available (qualifications include language considerations, such that treatment should be provided when possible by a psychologist who is able to deliver the service without the need for a translator). | | |
| Intervention | Patient condition | |
| | Mild and/or Uncomplicated | Moderate/Serious or Complicated (See Table X: Complicating Features) |
| | Treatment Plan: 8–18 weeks* | Treatment Plan: 19–40 weeks* |
| Treatment: psychotherapy (individual, couple, family group, in-vivo sessions), psycho-education, cognitive therapy rehabilitation | 8–36 hours** To be proposed/provided in stages with outcome evaluation and confirmation of the appropriateness of continuation of treatment at each stage | 19–80 hours** To be proposed/provided in stages with outcome evaluation and confirmation of the appropriateness of continuation of treatment at each stage |
| Review of external file material as received | 0–2 hours | 0–3 hours |
| Consultation, collaboration, and communication with treatment providers and others (e.g. phone, email and team meetings with other treating health professionals; contact with insurers, teachers, and employers) | 0–4 hours | 1–6 hours |
| Ongoing progress evaluation and formal reassessment: includes continuous evaluation of progress and formal re-administration, scoring, and interpretation of psychometric tests | 1–4 hours (occurring every 6 to 8 sessions) | 3–6 hours (occurring every 6 to 8 sessions) |
| Preparation of progress reports, discharge reports, and/or subsequent treatment plans | 2–4 hours | 4–6 hours |
| Disbursements and consumable goods used in therapy, e.g. books, manuals, workbooks, and tapes or CDs to support therapy; consumable test materials; use of external scoring services; and the cost of obtaining relevant records. | Billed on a cost recovery basis | Billed on a cost recovery basis |
| Total Treatment Plan Hours | 12–50 hours*** | 27–101 hours*** |
| <p>* It may be appropriate to use a few sessions at less frequent intervals in a “follow-up” phase for consolidation and relapse prevention as well as support for work/school reintegration. Such follow-up should be anticipated in the treatment plan. Although delivery of such sessions may extend the number of weeks of treatment, they should be included in the total number of hours recommended for treatment. In this way, the follow-up phase will not add additional hours or cost to the treatment described in this Guideline and Handbook.</p> <p>** Treatment should be proposed and provided in a <i>staged</i> manner. For some patients it may be realistic to predict that they will require an extensive course of treatment. However, continuation should be dependent upon re-evaluation and demonstration that response to treatment supports continuation.</p> <p>*** Patients with exceptional characteristics may reasonably require additional time and costs beyond the ranges described in these Guidelines and Handbook.</p> | | |
| <p>Outcomes: Discharge or submit new treatment plan according to patient status</p> <ul style="list-style-type: none"> • Impairment resolved, function restored, no further treatment required; <u>or</u> • Impairment continues, functional limitations continue, but no further psychological treatment is indicated; <u>or</u> • Impairment continues, functional limitations continue, further psychological assessment/examination and/or treatment/rehabilitation is indicated; <p>AND/OR</p> <ul style="list-style-type: none"> • Other assessment/examination and/or treatment is indicated. | | |

Barriers to Recovery and Complicating Factors

BARRIERS

Using the OCF-18 form to propose assessments/treatment demands that psychologists consider whether any “barriers to recovery” exist that will create obstacles for the client during assessment and/or treatment. Such barriers should be considered as factors that, if not addressed, could reasonably be expected to get in the way of the client’s ability to attend or participate fully in psychological assessment and/or treatment. Examples of such barriers include such factors as: lacking transportation to and from appointments, lacking childcare, scheduling difficulties, or an inability to access services in the client’s native language.

Note also that when including potential barriers to assessment or treatment, psychologists must also consider whether they have any recommendations or strategies to help the patient overcome these barriers. For example, upon uncovering such barriers during the course of assessment, one might recommend transportation to and from appointments be included on a separate OCF-18 to be funded, contingent on approval of the OCF-18 for psychological services. Translation services can be useful for an assessment, however, when at all possible, assessment and treatment should be provided in the client’s first language. Ideally, psychological treatment and rehabilitation interventions will not be provided using a translator. It is our recommendation that the psychologist consider it an obligation to discuss potential referral for services in the patient’s first language if reasonably available.

COMPLICATING FACTORS

Factors which contribute to the variability of the nature and extent of assessment and therapeutic interventions may be either complicating or facilitating of assessment and treatment. While few real barriers may exist for most clients, when dealing with vulnerable clients with multiple impairments, several complicating factors may affect the amount of time required to complete an assessment, or meet treatment goals. Various factors combine to determine the intensity, frequency, and duration of assessment processes and treatment plans. These include age, degree of impairment (mild vs. moderate-serious) and number and degree of complicating factors (none-mild vs. multiple-serious). Note in particular, that when working with geriatric adults, children, and adolescents, multiple clinical interviews, consultations with other health providers, and feedback interviews are generally required (e.g. school, residential facility, rehabilitation staff, family members/ caregivers); additionally, recommendations for academic planning or residential management are additional aspects of planning rehabilitation and treatment that can add substantially to report writing time. As a result, more time may be required for these particular components of an assessment/examination and treatment with these age groups.

A list of potential complicating factors is included in Table X.

Consistent with the literature we have reviewed, patients with more serious impairments/conditions and more complicating factors also generally require more intense treatment of longer duration. Thus, based on the clinical research literature, patients with more of the indicated Complicating Factors (see Guidelines Table X) could be expected to require longer treatment and more time for indirect services, such as consultation with other treating health professionals, while those with fewer of these factors could be expected to require shorter and simpler assessments and treatments. Note that the lists in Table X are not meant to be comprehensive; other factors may also exist that will either complicate or facilitate assessment and treatment of individual MVA survivors. Individual psychologists should indicate when these are relevant in order to flag the presence of Complicating Factors and explain the need for services in the upper end of the range of time within the Guideline required. Note that patients with “severe” psychological disorders would generally require more intensive and multidisciplinary assessment, including the possibility of inpatient treatment than is contemplated by these guidelines. Such disorders include for example, patients presenting with acute suicidality or during an acute psychotic episode.

| Table X: Complicating Factors | |
|--|--|
| Age | Assessment of children, adolescents, or geriatric adults often requires greater time for clinical interviews, consultation with other health providers, and feedback interviews. |
| Presence of pre-existing and co-existing psychological and physical vulnerabilities not related to the MVA, such as: | <ul style="list-style-type: none"> Previous exposure to traumatic events, especially recurrent childhood traumatic exposure Depression, anxiety disorders, pain disorder Physical injuries, acute and chronic debilitating medical conditions Impaired cognition Disability status, including learning disabilities Significant problems with attentional or behavioural control and regulation Developmental delay, ADHD, behavioural or conduct disorder |
| Absent or poor social supports or environmental resources, such as: | <ul style="list-style-type: none"> Poor parenting skills or dysfunction within the family Difficulties with school re-entry, or limited resources within the school and community Poor marital relationship Limited social support network Problematic work environment, currently off work and no modified work available if needed, or no return to work program available when needed Limited education and/or transferable vocational skills Limited social skills Lack of access to timely and appropriate medical care and other needed treatment Presence of multiple external stressors/stressful life events Language/ cultural barriers to optimal communication |
| More complex/serious injury/impairment/presentation as a result of the MVA, such as: | <ul style="list-style-type: none"> Significant injuries to other family members in the MVA The MVA resulted in death to another person Slower than expected/incomplete recovery from physical injuries More complex/serious/persistent psychological symptoms/ impairments Multiple diagnoses (physical and/ or psychological), impairments, and limitations in functioning Presence of post-traumatic numbing Cognitive impairments More time elapsed since MVA (e.g., greater than two years) High distress associated with health/ claim/ litigation processes, and a sense of loss of control over life |
| Significant functional impairments in the home, school or workplace as a result of the accident injuries | |

Conclusion

APPLICATION OF GUIDELINES TO INDIVIDUAL PATIENTS

Survivors of MVAs present with a wide variety of problems; it is the responsibility of the individual psychologist to determine how to approach these problems. The Guidelines are not meant to dictate a particular approach or to prescribe a particular theoretical orientation or set of techniques or interventions for treating survivors of MVAs. Rather, they are presented as assessment and treatment principles, independent of particular models or theories; each psychologist is responsible to draw on the state of the science in the area of concern (e.g. traumatic brain injury, PTSD), and to supplement this with his/her own clinical training and experience in order to ensure that appropriate service is rendered to the individual adult, adolescent, or child MVA survivor. Whether the psychologist is submitting or reviewing an application, the rationale and principles addressed in these guidelines should be borne in mind. In addition, as noted above, patient presentation and clinical needs tend to be more complex than are generally seen in more traditional mental health contexts.

While it is expected that all psychologists are knowledgeable about a range of evidence-based assessments and treatments, it is also expected that the responsible treating psychologist will apply the techniques and procedures that are appropriate to the individual MVA survivor and his/her specific situation. Just as it is expected that psychologists will only propose assessments and treatments within their areas of competence, it is also expected that psychologists working as Insurer Examiner reviewers will only review plans within their areas of practice and competence. It is also recommended that both those proposing and those reviewing applications are familiar with arbitration decisions affecting access to benefits.

Treatment approaches must be similarly evidence-based where applicable, but flexible, and employed within the context of an empathetic therapeutic relationship. For instance, although it is expected that valid, reliable assessments and re-evaluation will be employed before, during, and after therapy in order to document progress and determine outcomes, it must be noted that assessment instruments and treatment approaches may vary widely. It is incumbent upon IE examiners to pay special attention to presented evidence of patient progress to date, complicating/extenuating circumstances which may have resulted in a premature plateau in recovery, and appreciate the notion of staged clinical and functional intervention phases and evidence of outstanding rehabilitation barriers to maximal recovery.

The severity of the impairment/ condition and presence of Complicating Factors also contribute to variability within the Guideline ranges. For these reasons, these Guidelines describe usual ranges and recommended re-assessments for professional time and associated costs for assessments and treatment plans for most patients, rather than prescribe specific hours and procedures for particular patient presentations. As a result, these Guidelines are not intended to prescribe a set assessment or treatment plan duration for all MVA victims. Nor do these Guidelines dictate the use of particular approaches; rather, they are intended to encourage the utilization of sensitive, flexible, evidence-based assessment and treatment approaches.

Psychologists do not see the majority of MVA survivors. However, the scientific literature that is fast growing in this area indicates that the small subgroup MVA survivors who suffer significant psychological impairments can result in a large drain on any system in which they are subscribers. A psychological assessment can identify those at risk for developing such impairments, convey this information to others in order to prescribe and direct appropriate interventions, and serve as an indispensable communication tool in explaining a given patient's progress in their rehabilitation. Psychologists also provide treatment that prevents and reduces disability, returns patients to work, improves their quality of life, and provides substantial cost savings to payor systems. The value of the role of psychology in assessing and treating auto accident victims is increasingly understood and must be reflected in current expectations for care. These Guidelines and the accompanying Handbook represent

the current state of the knowledge in assessment and treatment of MVA victims; they should be seen as living documents that will evolve over time.

REFERENCES

- Acquired Brain Injury Rehabilitation information sheet (2010). Retrieved from www.torontorehab.com.
- American Academy of Clinical Neuropsychology (AACN) Practice Guidelines for Neuropsychological Assessment and Consultation. The Clinical Neuropsychologist, 21, 209-231 (2007).
- American Medical Association (1995). Guides to the Evaluation of Permanent Impairment. Chicago, Ill: American Medical Association.
- American Psychiatric Association (2000). Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition-TR. Washington, DC: American Psychological Association.
- American Psychological Association, National Council on Measurement in Education, and American Educational Research Association (1999). Standards for Educational and Psychological Testing (1999). APA: Washington DC.
- American Psychological Association (2002). Ethical Principles of Psychologists and Code of Conduct. American Psychologist, 57(12), 1060-1073.
- American Psychological Association (2002). Criteria for Practice Guideline Development and Evaluation. American Psychologist, 57(12), 1048 –1051.
- American Psychological Association (2003). Description of the specialty of clinical neuropsychology: Approved by APA Council of Representatives in 1996 and re-approved in 2003. Retrieved from: <http://www.div40.org/def.html>.
- American Psychological Association (2005). Determination and Documentation of the Need for Practice Guidelines. American Psychologist, 60(9), 976-8
- Anderson, V.A., Catroppa, C., Morse, S., Haritou, F. and Rosenfeld, J. (2005). Functional plasticity or vulnerability after early brain injury? Pediatrics, 116, 1374-1382.
- Antonuccio D.O., Thomas M., & Danton W.G. (1997). A cost-effectiveness analysis of cognitive behavior therapy and Fluoxetine (Prozac). Behavior Therapy, 28, 187-210.
- Barnsley L. (2004). An evidence-based approach to the treatment of acute whiplash injury. Pain Research Management, 8(1), 33-36.
- Beck, J.G., & Coffey S.F. (2005). Group cognitive behavioral treatment for PTSD: Treatment of motor vehicle accident survivors. Cognitive and Behavioral Practice, 12(3), 267-277.
- Beck JG & Coffey SP. (2007). Assessment and treatment of Posttraumatic Stress Disorder after a motor vehicle collision: Empirical findings and clinical observations. Professional Psychology: Research and Practice, 38(6), 629-639.
- Benight CC, Cieslak R, Molton IR, & Johnson LE. (2008). Self-evaluative appraisals of coping capability and posttraumatic distress following motor vehicle accidents. Journal of Consulting and Clinical Psychology, 76(4), 677-685.
- Beutler L.E. & Harwood T.M. (2000). Prescriptive Psychotherapy: A Practical Guide Systematic Treatment Selection. NY: Oxford University Press.

- Bigler E. (2008). Neuropsychology and clinical neuroscience of persistent post-concussive syndrome. *Journal of the International Neuropsychological Society*, 14, 1-22.
- Blanchard E.B., Buckley T.C., Hickling E.J., & Taylor A.E. (1998). Post-traumatic stress disorder and comorbid major depression: Is the correlation an illusion? *Journal of Anxiety Disorders*, 12, 21-37.
- Blanchard E.B. & Hickling, E.J. (1997). After the Crash: Assessment and Treatment of Motor Vehicle Accident Survivors. Second edition. Washington, DC: APA Press.
- Blanchard EB, & Hickling EJ (2004). After the Crash: Psychological Assessment and Treatment of Survivors of Motor Vehicle Accidents. American Psychological Association. Washington ,DC.
- Blanchard EB, Hickling EJ, Barton KA, Taylor AE, Loos WR, & Jones-Alexander J. (1996). One year prospective follow up of motor vehicle accident victims. *Behaviour Research and Therapy*, 34, 775-786.
- Blanchard E, Hickling EJ, Forneris CA, Taylor AE, Buckley TC, & Loos WR. (1997). Prediction of remission of acute post-traumatic stress disorder in motor vehicle accidents. *Journal of Traumatic Stress*, 10, 215-234.
- Blanchard E., Hickling, E., Malta, L., Jaccard, J., Devineni, T., Veazey, C., & Galovski, T. (2003a). Prediction of response to psychological treatment among motor vehicle accident survivors with PTSD. *Behavior Therapy*, 34, 351-363.
- Blanchard E.B., Hickling E.J., Taylor A.E., & Loos W. (1995). Psychiatric morbidity associated with motor vehicle accidents. *Journal of Nervous and Mental Diseases*. 183(8), 495-504.
- Blumenthal JA, Babyak M, Wei J, O'Connor C, Waugh R, Eisenstein E, Mark D, Sherwood A, Woodley PS, Irwin RJ, Reed G. (2002). Usefulness of psychosocial treatment of mental stress-induced myocardial ischemia in men. *American Journal of Cardiology*, 89(2):164-8.
- Boone, K.B., Lesser, I.M., Miller, B.L., Wohl, M., Berman, N., Lee, A., Palmer, B., & Back, C. (1995). Cognitive functioning in older depressed outpatients: Relationship of presence and severity of depression to neuropsychological test scores. *Neuropsychology*, 9(3), 390-398.
- Brammer R. (2002). Effects of experience and training on diagnostic accuracy, *Psychological Assessment*, 14(1), 110-3.
- Brenner LA, Vanderploeg RD, & Terrio H. (2009). Assessment and diagnosis of mild Traumatic Brain Injury, Posttraumatic Stress Disorder, and other polytrauma conditions: Burden of Adversity Hypothesis. *Rehabilitation Psychology*, 54(3), 239-246.
- Breslau N, Davis TC, Andreski P, & Peterson E. (1991). Traumatic events and posttraumatic stress disorder in an urban population of young adults. *Archives of General Psychiatry*, 48, 216-222.
- Breslau N, Davis GC, Peterson EL, & Schultz LR. (2000). A second look at comorbidity in victims of trauma: The posttraumatic stress disorder-major depression connection. *Biological Psychiatry*, 48, 902-909. In Duckworth MP. (2008). Psychological conditions associated with motor vehicle collisions. In Duckworth, Iezzi, & O'Donohue (eds.) Motor Vehicle Collisions: Medical, Psychosocial, and Legal Consequences. Academic Press.
- Bryant R.A. (2003). Early predictors of posttraumatic stress disorder. *Biological Psychiatry*, 53 789-795.

- Bryant RA. (2008). Acute stress disorder consequent to motor vehicle collisions. In Duckworth, Iezzi, & O'Donohue (eds.) Motor Vehicle Collisions: Medical, Psychosocial, and Legal Consequences. Academic Press.
- Bryant RA & Harvey AG (1998). Relationship between acute stress disorder and posttraumatic stress disorder following mild traumatic brain injury. American Journal of Psychiatry, 155(5), 625-629.
- Bryant RA & Harvey AG. (2002). Delayed-onset posttraumatic stress disorder: A prospective evaluation. Australian & New Zealand Journal of Psychiatry, 36(2), 205-209.
- Bryant RA & Harvey AG. (2003). The influence of litigation on maintenance of posttraumatic stress disorder. Journal of Nervous and Mental Disease, 191, 191-193.
- Bryant RA, Harvey AG, Dang S, & Sackville T. (1998). Assessing acute stress disorder: Psychometric properties of a structured clinical interview. Psychological Assessment, 10, 215-220.
- Bryant RA, Harvey AG, Dang S, & Sackville T. (1998). Treatment of acute stress disorder: A comparison of cognitive behavior therapy and supportive counselling. Journal of Consulting and Clinical Psychology, 66, 862-866.
- Bryant RA, Sackville T, Dang ST, Moulds M, & Guthrie R. (1999). Treating acute stress disorder: An evaluation of cognitive behavior therapy and counseling techniques. American Journal of Psychiatry, 156, 1780-1786.
- Bryant RA, Moulds ML, Guthrie RM, & Nixon RDV. (2003). Treating acute stress disorder following mild traumatic brain injury. American Journal of Psychiatry, 160, 585-587.
- Bryant RA, Moulds MA, & Nixon R. (2003). Cognitive behavior therapy of acute stress disorder: A four-year follow-up. Behaviour Research and Therapy, 41, 489-494.
- Bryant RA, Moulds ML, Guthrie RM, Dang ST, Mastrodomenico J, Nixon RDV, Felmingham KL, and Hopwood S. (2008). A randomized controlled trial of exposure therapy and cognitive restructuring for Posttraumatic Stress Disorder. Journal of Consulting and Clinical Psychology, 76(4), 695-703.
- Bryant RA, Moulds ML, Guthrie RM, and Nixon RDV. (2005). The additive benefit of hypnosis and Cognitive-Behavioral Therapy in treating Acute Stress Disorder. Journal of Consulting and Clinical Psychology, 73(2), 334-340.
- Burstein A. (1984). Treatment length in post-traumatic stress disorder. Psychosomatics, 27, 632-637.
- Camara W.J., Nathan, J.S., & Puente, A.E. (2000). Psychological test usage: Implications in professional psychology. Professional Psychology: Research and Practice, 31(2), 141-154.
- Canadian Institute for Health Information. (2001). National health expenditure trends, 1975-2001. Ottawa, ON: Canadian Institute for Health Information.
- Canadian Psychological Association. (2001). Putting human behaviour at the heart of health care in Canada (A brief presented to the Commission on the Future of Health Care in Canada). Ottawa: Author.
- Carroll, L, Cassidy, JD, Peloso, PM, Borg, J, von Holst, H, Holm, L, Paniak, C, & Pepin, M. (2004). Prognosis for mild traumatic brain injury: Results of the WHO collaborating center task force on mild traumatic brain injury. Journal of Rehabilitation Medicine, Supplement 43, 84-105.

- Carty J, O'Donnell ML, & Creamer M. (2006). Delayed-onset PTSD: A prospective study of injury survivors. Journal of Affective Disorders, 90(2-3), 257-261.
- Catroppa, C., Anderson, V.A., C., Morse, S., Haritou, F. and Rosenfeld, J. (2008). Outcome and predictors of functional recovery 5 years following pediatric traumatic brain injury. Journal of Pediatric Psychology, 33, 707-718.
- Caudill, M.A. (2002). Managing Pain Before it Manages You (revised edition). NY: Guilford.
- Cepoiu M, McCusker J, Cole MG, Sewitch M, Belzile E, Ciampi A. (2008). Recognition of depression by non-psychiatric physicians – a systematic literature review and meta-analysis. Journal of General Internal Medicine, 23, 25-36. In Patten SB, Kennedy SH, Lam RW, O'Donovan C, Filteau MJ, Parikh SV, and Ravindran AV. (2009). Canadian Network for Mood and Anxiety Treatments (CANMAT) Clinical guidelines for the management of major depressive disorder in adults. I. Classification, burden and principles of management. Journal of Affective Disorders, 117, S5-S14
- Chan A.O., Medicine M., Air T.M., McFarlane A.C. (2003). Posttraumatic stress disorder and its impact on the economic and health costs of motor vehicle accidents in South Australia. Journal of Clinical Psychiatry, 64(2), 175-81.
- Chapman S.L., Jamison R.N., Sanders S.H., Lyman D.R., Lynch N.T. (2000). Perceived treatment helpfulness and cost in chronic pain rehabilitation. Clinical Journal of Pain 16(2):169-77.
- Chiles J.A., Lambert M.J., & Hatch A.L. (1999). The impact of psychological interventions on medical cost offset: A meta-analytic review. Clinical Psychology: Science and Practice, 6, 204-220.
- Chou R, Atlas SJ, Stanos SP, Roenquist RW. (2009a). Nonsurgical interventional therapies for low back pain: A review of the evidence for an American Pain Society clinical practice guideline. Spine, 34, 1078-1093.
- Chou R, Fanicullo GJ, Fine PG, Adler JA, Ballantyne JC, Davies P, Donovan MI, Fishbain DA, Foley KM, Fudin J, Gilson AM, Kelter A, et al. (2009b). Clinical guidelines for the use of chronic opioid therapist in chronic noncancer pain. Journal of Pain, 10, 113-130.
- Cohen, J., Mannarino, A., Perel, J., & Staron, V. (2007). A pilot randomized controlled trial of combined trauma-focused CBT and setraline for childhood PTSD symptoms. Journal of the American Academy of Child & Adolescent Psychiatry, 46(7), 811-819.
- Courtois CA (2004). Complex trauma, complex reactions: Assessment and treatment. Psychotherapy: Theory, Research, Practice, and Training, 41, 412 – 425.
- Creamer M, O'Donnell ML, & Pattison P. (2004). The relationship between acute stress disorder and posttraumatic stress disorder in severely injured trauma survivors. Behaviour Research and Therapy, 42, 315-328.
- Daw J (2001). Psychological assessments shown to be as valid as medical tests. Monitor on Psychology, 32(7).
- Deykin E.Y., Keane T.M., Kaloupek D., Fincke G., Rothendler J., Siegfried M., & Creamer K. (2001). Posttraumatic stress disorder and the use of health services. Psychosomatic Medicine, 63(5), 835-41.
- Dobson KS, Hollon SD, Dimidjian S, Schmalting KB, Kohlenberg RJ, Gallop RJ, Rizvi SL, Gollan JK, Dunner DL, and Jacobson NS. (2008). Randomized trial of Behavioral Activation, Cognitive Therapy,

and antidepressant medication in the prevention of relapse and recurrence in major depression. Journal of Consulting and Clinical Psychology, 76(3), 468-477

Dorfman W.I. (2000). Psychological assessment and testing under managed care. In A.J. Kent & M. Hersen (Eds). A Psychologist's Proactive Guide to Managed Mental Health Care. Mahwah, NJ: Erlbaum.

Druss B.G., Rosenheck M.D., & Sledge W.H. (2000). Health and disability costs of depressive illness in a major U.S. corporation. American Journal of Psychiatry, 157, 1274-1278.

Duckworth MP. (2008). Psychological conditions associated with motor vehicle conditions. In Duckworth, Iezzi, & O'Donohue (eds.) Motor Vehicle Collisions: Medical, Psychosocial, and Legal Consequences. Academic Press.

Duckworth, MP, Iezzi T, & O'Donohue WT. (2008). Introduction. In Duckworth, Iezzi, & O'Donohue (eds.) Motor Vehicle Collisions: Medical, Psychosocial, and Legal Consequences. Academic Press.

Dyb, G., Holen, A., Braenne, K., Indredavik, M. & Aarseth, J. (2003). Parent-child discrepancy in reporting children's post-traumatic stress reactions after a traffic accident. Nordic Journal of Psychiatry, 57(5), 339-344.

Ehlers A, Mayou RA, & Bryant B. (1998). Psychological predictors of chronic PTSD after motor vehicle accidents. Journal of Abnormal Psychology, 107, 508-519.

Ehlers, A., Clark, D.M., Hackman, A., McManus, F., Fennel, M., Herbert, C., & Mayou, R. (2003) A randomized controlled trial of cognitive therapy, a self-help booklet, and repeated assessments as early interventions for posttraumatic stress disorder. Archives of General Psychiatry, 60(10), 1024-32.

Family Caregiver Alliance. (2010). Fact sheet and Publications: Traumatic Brain Injury. Retrieved from <http://www.caregiver.org>.

Fay, T.B., Yeates, K.O., Taylor, H.G., Bangert, B., Dietrich, A., Nuss, K.E., Rusin, J., and Wright, M. (2010). Cognitive reserve as a moderator of postconcussive symptoms in children with complicated and uncomplicated mild traumatic brain injury. Journal of the International Neuropsychological Society, 16, 94-105.

Fectau G & Nicki R (1999). Cognitive behavioural treatment of post traumatic stress disorder after motor vehicle accident. Behavioural and Cognitive Psychotherapy, 27, 201-214.

Felitti, V.J., Anda, R.F., Nordenberg, D., Williamson, D.F., Spitz, A.M., Edwards, V., Koss, M.P., & Marks, J.S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. American Journal of Preventive Medicine, 14, 245-258.

Financial Services Commission of Ontario. (July 2010). Professional Services Guide line. Retrieved from <http://fSCO.gov.on.ca>.

Finn SE & Tonsager ME. (1997). Information-gathering and therapeutic models of assessment: Complementary paradigms. Psychological Assessment, 9, 374-385. In Poston JM & Hanson WE (2010). Meta-analysis of psychological assessment as a therapeutic intervention. Psychological Assessment, 22(2), 203-212.

Flor H, Fydrich T, & Turk DC. (1992). Efficacy of multidisciplinary pain treatment centers: A meta-analytic review. Pain, 4, 221-230.

- Foa, E.B., & Meadows, E.A. (1997). Psychosocial treatments for posttraumatic stress disorder: A critical review. Annual Review of Psychology, *48*, 449-480.
- Foa, E.B., Rothbaum, B.O., Riggs, D.S., & Murdock, T.B. (1991). Treatment of posttraumatic stress disorder in rape victims: A comparison between cognitive-behavioral procedures and counseling. Journal of Consulting and Clinical Psychology, *59*, 715-723.
- Freebury R., Ennis J., Rideout C., & Wright M. (1998). General guidelines for the practice of psychotherapy. In P. Cameron, J. Ennis, & J. Deadman (Eds.) Standards and Guidelines for the Psychotherapies. Toronto: University of Toronto Press.
- Gardea M.A. & Gatchel R.J. (2000). Interdisciplinary treatment of chronic pain. Current Reviews: Pain, *4*(1):18-23.
- Geisser, M., Roth, R., Bachman, J., & Eckert, T. (1996). The relationship between symptoms of posttraumatic stress disorder and pain, affective disturbance, and disability among patients with accident and non-accident related pain. Pain, *66*, 207-214.
- Gillies, L.A. (2002). Interpersonal psychotherapy for depression and other disorders. In D.H. Barlow (Ed.), Clinical Handbook of Psychological Disorders: A Step-by-Step Treatment Manual (3rd ed.). NY: Guilford Press.
- Girona RJ, Clark ME, Ruff RL, Chait S, Craine M, Walker R., & Scholten J. (2009). Traumatic Brain Injury, polytrauma, and pain: Challenges and treatment strategies for the polytrauma rehabilitation. Rehabilitation Psychology, *54*(3), 247-258.
- Golden G.A. (1997). Impact of psychotherapy: Does it affect frequency of visits to family physicians? Canadian Family Physician, *43*, 1098-1102.
- Gould A., Otto M.W., & Pollack M.H. (1995). A meta-analysis of treatment outcome for panic disorder. Clinical Psychology Review, *15*, 819-844.
- Goosens M.E.J.B. & Evers S.M.A.A. (1997). Economic evaluation of back pain interventions. Journal of Occupational Rehabilitation *7*, 15-32.
- Green MM, McFarlane AC, Hunter CE, & Griggs WM. (1993). Undiagnosed posttraumatic stress disorder following motor vehicle accidents. Medical Journal of Australia, *159*, 529-534.
- Greenberger, D., & Padesky, C.A. (1995). Mind over Mood. NY: Guilford.
- Gronwall, D., Wrightson, P., and McGinn, V. (1997). Effect of mild head injury during the preschool years. Journal of the International Neuropsychological Society, *3*, 592-597.
- Grunfeld T., Rauch S., Yadin E., & Foa E. (2003). Changes in physical health symptoms and medical utilization with prolonged exposure therapy for chronic PTSD in assault survivors. Poster presented to the 37th Annual Convention of the Association for Advancement of Behavior Therapy, November 20-23, Boston, MA.
- Hammar, A., Lund, A., & Hugdahl, K. (2003). Selective impairment in effortful information processing in major depression. Journal of the International Neuropsychological Society, *9*, 954-959.

Hart R., Martelli M., Zasler N. (2000). Chronic pain and neuropsychological functioning. Neuropsychology Review, 10, 131–149.

Hart R., Wade J., Martelli M. (2003) Cognitive impairment in patients with chronic pain: The significance of stress. Current Pain and Headache Reports, 7, 116-226.

Harvey AG & Bryant RA. (1998). The relationship between acute stress disorder and post-traumatic stress disorder: A prospective evaluation of motor vehicle accident survivors. Journal of Consulting and Clinical Psychology, 66, 507-512.

Harvey AG & Bryant RA (1998). Acute stress disorder following mild traumatic brain injury. Journal of Nervous and Mental Disease, 186, 333-337.

Harvey AG & Bryant RA. (1999). The relationship between acute stress disorder and post-traumatic stress disorder: A 2-year prospective evaluation. Journal of Consulting and Clinical Psychology, 67, 985-988.

Harvey AG & Bryant RA. (1999). Predictors of acute stress following motor vehicle accidents. Journal of Traumatic Stress, 12, 519-525.

Harvey AG & Bryant RA. (2000). A two-year prospective evaluation of the relationship between acute stress disorder and posttraumatic stress disorder following mild traumatic brain injury. American Journal of Psychiatry, 157, 626-628.

Health Canada. (2009). Environmental Scan on Workplace Health in Canada (2009). Retrieved from <http://www.hc-sc.gc.ca/ewh-semt/pubs/>

Hickling EJ & Blanchard EB. (1992). Posttraumatic stress and motor vehicle accidents. Journal of Anxiety Disorders, 6, 285-291.

Hickling EJ & Blanchard EB (2006). Overcoming the Trauma of your Motor Vehicle Accident. Oxford University Press.

Hickling EJ, Kuhn ER, & Beck JG. (2008). Treatment of posttraumatic stress disorder consequent to motor vehicle collisions: Contributions from a clinical science. In Duckworth, Iezzi, & O'Donohue (eds.) Motor Vehicle Collisions: Medical, Psychosocial, and Legal Consequences. Academic Press.

Holbrook TL, Anderson JP, Sieber WJ, Browner D, & Hoyt DB. (1998). Outcome after major trauma: 12-month and 18-month follow-up results from the Trauma Recovery Project. Journal of Trauma: Injury, Infection, and Critical Care, 45, 315-324.

Holbrook TL, Anderson JP, Sieber WJ, Browner D, & Hoyt DB. (1999). Outcome after major trauma: 12-month and 18-month follow-up results from the Trauma Recovery Project. Journal of Trauma: Injury, Infection, and Critical Care, 46, 765-771.

Hollon SD, DeRubeis RJ, Shelton RC, Amsterdam JD, Salomon RM, O'Reardon JP, Lovett ML, Young PR, Haman KL, Freeman BB, Gallop R. (2005). Prevention of relapse following cognitive therapy vs. medications in moderate to severe depression. Archives of General Psychiatry, 52, 417-422.

Hunsley J. (2003). Cost-Effectiveness and medical cost-offset considerations in psychological service provision. Canadian Psychology, 44(1), 61-73.

Iezzi T, Duckworth MP, & O'Donohue WT (2008). Conclusions and future directions in the study of motor vehicle collisions. In Duckworth, Iezzi, & O'Donohue (eds.) Motor Vehicle Collisions: Medical, Psychosocial, and Legal Consequences. Academic Press.

International Test Commission (2000) International Guidelines for Test Use. Retrieved from <http://www.intestcom.org>.

Iverson GL, Brooks BL, & Ashton VL (2008). Cognitive impairment consequent to motor vehicle collisions: Foundations for clinical and forensic practice. In Duckworth, Iezzi, & O'Donohue (eds.) Motor Vehicle Collisions: Medical, Psychosocial, and Legal Consequences. Academic Press.

Jacobs D.F. (1987). Cost-effectiveness of specialized psychological programs for reducing hospital stays and outpatient visits. Journal of Clinical Psychology, *43*, 729-735.

Jacobs D.F. (1988). Marketing psychological services in the public sector. Psychotherapy, *25*, 377-386.

Jenewein, et al, (2009). Development of chronic pain following severe accidental injury: Results of a 3-year follow-up study. Journal of Psychosomatic Research, *66*, 119-126.

Johansson, C., Dahl, J., Jannert, M., Melin, L., & Andersson, G. (1998). Effects of a cognitive-behavioral pain-management program. Behaviour Research and Therapy, *36*, 915-930.

Juriscic, B. & Marusic, A. (2009). Suicidal ideation and behavior and some psychological correlates in physically disabled motor-vehicle accident survivors. Crisis, *30* (1), 34-8.

Keane, T.M., & Barlow, D.H. (2002). Posttraumatic Stress Disorder. In D.H. Barlow (Ed.). Anxiety and its Disorders: The Nature and Treatment of Anxiety and Panic. NY: Guilford.

Keppel-Benson, J., Ollendick, T., & Benson, M. (2002). Post-traumatic stress in children following motor vehicle accidents. Journal of Child Psychology and Psychiatry, *43*(2), 203-212

Kessler R.C., Sonnega A., Bromet E., Hughes M., & Nelson C.B. (1995). Post-traumatic stress disorder in the national Comorbidity Survey. Archives of General Psychiatry, *52*, 1048-1060.

Kirsch I, Deacon BJ, Huedo-Medina TB, Scoboria A, Moore TJ, Johnson BT. (2008). Initial severity and antidepressant benefits: A meta-analysis of data submitted to the Food and Drug Administration. PloS Medicine, *5*(2), 0260-0268:

Kizilbash, A.H., Vanderploeg, R.D., & Curtiss, G. (2002). The effects of depression and anxiety on memory performance. Archives of Clinical Neuropsychology, *17*, 57-67.

Karjalainen KA, Malmivaara A, van Tulder MW, Roine R, Jauhiainen M, Hurri H, Koes BW. (2003a). Multidisciplinary biopsychosocial rehabilitation for neck and shoulder pain among working age adults. Cochrane Database of Systematic Reviews, *2*: CD002194. DOI: 10.1002/14651858.CD002194.

Karjalainen KA, Malmivaara A, van Tulder MW, Roine R, Jauhiainen M, Hurri H, Koes BW. (2003b). Multidisciplinary biopsychosocial rehabilitation for subacute low-back pain among working age adults. Cochrane Database of Systematic Reviews, *2*: CD002193. DOI: 10.1002/14651858.CD002193.

Landolt, M., Vollrath, M., Timm, K., Gnehm, H., & Sennhauser, F. (2005). Predicting posttraumatic stress symptoms in children after road traffic accidents. *Journal of the American Academy of Child & Adolescent Psychiatry*, *44* (12), 1276-1283

Lechnyr, R. (1992). Cost savings and effectiveness of mental health services. *Journal of the Oregon Psychological Association*, *38*, 8-12.

Lechnyr, R. (1993). The cost savings of mental health services. *EAP Digest*, 22-23.

Lew HL, Poole JH, Vanderploeg RD, Goodrich GL, Dekelboun S, Guillory SB, et al (2007). Program development and defining characteristics of returning military in a VA Polytrauma Network Site. *Journal of Rehabilitation Research and Development*, *44*, 1027-1034.

Lezak M.D. (1995). *Neuropsychological Assessment*. NY: Oxford University Press.

Lezak , M., Howieson, D., & D. W. Loring (2004). *Neuropsychological Assessment*.

Libon, DJ. et al. (2009). Neuropsychological Deficits Associated with Complex Regional pain Syndrome. *Journal of the International Neuropsychological Society*, *16* (3), 566-573.

Lowenstein, L. (2001). Post-traumatic stress reactions in victims of motor accidents. *Police Journal*, *74*(1). 9-25.

Maercker, A., Zoller, T., Menning, H., Rabe, S., Karl, A. (2006) Dresden PTSD treatment study: randomized controlled trial of motor vehicle accident survivors. *BMC Psychiatry*, *6*, 495-511.

Maes M, Mylle EJ, Delmeire L, & Altamura C. (2000). Psychiatric morbidity and comorbidity following accidental man-made traumatic events: Incidents and risk factors. *European Archives of Psychiatry and Clinical Sciences*, *250*, 156-160.

Marks, I., Lovell, K., Noshirvani, H., Livanou, M, & Thrasher, S. (1998). Treatment of posttraumatic stress disorder by exposure and/or cognitive restructuring: A controlled study. *Archives of General Psychiatry*, *55*, 317-325.

Mataix-Cols, D. (2003). Declarative and procedural learning in individuals with subclinical obsessive-compulsive symptoms. *Journal of Clinical and Experimental Neuropsychology*, *25*(6), 830-41.

Mayou RA & Bryant B. (2001). Outcome in consecutive emergency department attenders following a road traffic accident. *British Journal of Psychiatry*, *179*, 528-534.

Mayou RA, Bryant B, & Duthie R. (1993). Psychiatric consequences of road traffic accidents. *British Medical Journal*, *307*, 647-651.

Mayou RA, Bryant B, & Ehlers A. (2001). Prediction of psychological outcomes one year after a motor vehicle accident. *American Journal of Psychiatry*, *158*, 1231-1238.

Mayou RA, Bryant B, & Ehlers A. (2003). Does early psychological intervention promote recovery from posttraumatic stress?. *Psychological Science in the Public Interest*, *4*, 45-79.

Mayou RA, Ehlers A, & Bryant B. (2002). Posttraumatic stress disorder after motor vehicle accidents: 3-year follow-up of a prospect of longitudinal study. *Behaviour Research and Therapy*, *40*, 665-675.

- Mayou RA, Tyndel S, & Bryant B. (1997). Long-term outcome of motor vehicle accident injury. Psychosomatic Medicine, *59*, 578-584.
- Meiser-Stedman, R., Dalgleish, T., Glucksman, E., Yule, W., & Smith, T. (2009). Maladaptive cognitive appraisals mediate the evolution of posttraumatic stress reactions: A 6-month follow-up of child and adolescent assault and motor vehicle accident survivors. Journal of Abnormal Psychology, *118*(4), 778-87.
- Meiser-Stedman, R., Smith, P., Glucksman, E., Yule, W., & Dalgleish, T. (2007). Parent and child agreement for acute stress disorder, post-traumatic stress disorder and other psychopathology in a prospective study of children and adolescents exposed to single-event trauma. Journal of Abnormal Psychology, *35*(2), 191-201
- Meiser-Stedman, R., Smith, P., Glucksman, E., Yule, W., & Dalgleish, T. (2008). The posttraumatic stress disorder diagnosis in preschool and elementary school age children exposed to motor vehicle accidents. American Journal of Psychiatry, *165*(10), 1326-1337
- Mghaieth, S., Othman, S., Bouden, A., & Halayem, M. (2007). Post-traumatic stress disorder in children: clinical aspects and comorbidity. L'Encephale: Revue de psychiatrie Clinique biologique et therapeutique, *33*(4), 598-602.
- Michaels AJ, Michaels CE, Smith JS, Moon CH, Peterson C, & Long BB. (2000). Outcome from injury: General health, work status, and satisfaction 12 months after trauma. Journal of Trauma: Injury, Infection, and Critical Care, *48*, 841-850.
- Nicholson K (2000). Pain, cognition, and traumatic brain injury. Neurorehabilitation, *14*, 95–103.
- Norris F.H. (1992). Epidemiology of trauma: Frequency and impact of different potentially traumatic events on different demographic groups. Journal of Consulting and Clinical Psychology, *60*, 409-418.
- Organisation for Economic Co-operation and Development (2009). OECD Health Data 2009: Statistics and Indicators for 30 Countries). Retrieved from <http://www.oecd.org/health>.
- O'Donnell ML, Creamer M, & Ludwig G. (2008). PTSD and associated mental health consequences of motor vehicle collisions. In Duckworth, Iezzi, & O'Donohue (eds.) Motor Vehicle Collisions: Medical, Psychosocial, and Legal Consequences. Academic Press.
- O'Donnell ML, Creamer MC, Parslow R, Elliott P, Holmes ACN, Ellen S, Judson R, McFarlane AC, Silove D, and Bryant RA (2008). A predictive screening index for Posttraumatic Stress Disorder and Depression following traumatic injury. Journal of Consulting and Clinical Psychology, *76*(6), 923-932.
- Ontario Neurotrauma Foundation (2010): ABI Dataset Pilot Project. Retrieved from <http://www.onf.org>.
- Ontario Psychological Association (1990) Ontario Psychological Association (OPA) Guide to Fees and Billing Practices. Ontario Psychological Association.
- Ontario Psychological Association. (2001). Psychology Assessment and Treatment Guidelines. Financial Services Commission of Ontario.
- Ontario Psychological Association Auto Task Force (2005). OPA Guidelines for Assessment and Treatment in Auto Insurance Claims. Ontario Psychological Association.

- Ontario Psychological Association Auto Task Force (2005). Companion Document to: OPA Guidelines for Assessment and Treatment in Auto Insurance Claims. Ontario Psychological Association.
- Parikh SV, Segal ZV, Grigoriadis S, Ravindran AV, Kennedy SH, Lam RW, and Patten SB. (2009). Canadian Network for Mood and Anxiety Treatments (CANMAT) Clinical guidelines for the management of major depressive disorder in adults. II. Psychotherapy alone or in combination with antidepressant medication. Journal of Affective Disorders, 117, S15-S255.
- Patten SB, Kennedy SH, Lam RW, O'Donovan C, Filteau MJ, Parikh SV, and Ravindran AV. (2009). Canadian Network for Mood and Anxiety Treatments (CANMAT) Clinical guidelines for the management of major depressive disorder in adults. I. Classification, burden and principles of management. Journal of Affective Disorders, 117, S5-S14
- Pepping, M. & Prigatano G.P. (2003). Psychotherapy after brain injury: Costs and benefits. In G.P. Prigatano & N.H. Pliskin (Eds.), Clinical Neuropsychology and Cost Outcome Research: A Beginning. NY: Taylor & Francis.
- Peters L., Simon E.P., Folen R.A., Umphress V., Lagana L. (2000). The COPE program: treatment efficacy and medical utilization outcome of a chronic pain management program at a major military hospital. Military Medicine, 165(12): 954-60.
- Peyron R, Laurent B, Garcia-Larrea L (2000). Functional imaging of brain responses to pain: a review and meta-analysis. Clinical Neurophysiology, 30, 263–288.
- Poston JM & Hanson WE (2010). Meta-analysis of psychological assessment as a therapeutic intervention. Psychological Assessment, 22(2), 203-212.
- Quebec (2001). Pour un regime d'assurance medicaments equitable et viable. Rapport prepare par le comite sur la pertinence et la faisabilite d'un regime universel public d'assurance medicaments au Quebec. Quebec, QC: Ministere de la Sante et des Services Sociaux (C. Montmarquette, President).
- Resick, P.A. & Calhoun, K.S. (2001). Posttraumatic stress disorder. In D.H. Barlow (ed.) Clinical Handbook of Psychological Disorders: A Step by Step Treatment Manual (3rd edition). NY: Guilford.
- Romanow R.J. & Marchildon G.P. (2003). Psychological services and the future of health care in Canada. Canadian Psychology, 44(4), 283-295.
- Rothbaum BO, Foa EB, Riggs DS, Murdock T, & Walsh W. (1992). A prospective examination of post-traumatic stress disorder in rape victims. Journal of Traumatic Stress, 5(3), 455-475.
- Ruff, R.M., & Richards, P.M. (2003). Neuropsychological assessment and management of patients with persistent postconcussional disorders. In G.P. Prigatano & N.H. Pliskin (Eds.), Clinical Neuropsychology and Cost Outcome Research: A Beginning. NY: Taylor & Francis.
- Ruff RM, Iverson GL, Barth JT, Bush SS, Broshek DK, and the NAN Policy and Planning Committee. (2009). Recommendations for diagnosing a mild Traumatic Brain Injury: A National Academy of Neuropsychology education paper. Archives of Clinical Neuropsychology, 24, 3-10.
- Sacco, W.P., & Beck, A.T. (1995). Cognitive theory and therapy. In E.E. Beckham & W.R. Leber (Eds.), Handbook of Depression (2nd ed.). NY: Guilford Press.

- Schillaci J, Yanasak E, Adams JH, Dunn NJ, Rehm LP, & Hamilton JD. (2009). Guidelines for differential diagnosis in a population with Posttraumatic Stress Disorder. Professional Psychology: Research and Practice, 40(1), 39-45.
- Schmitz N, Wang J, Malla A, Lesage A. (2007). Joint effect of depression and chronic conditions on disability: Results from a population-based study. Psychosomatic Medicine, 60, 332-338.
- Schnurr, P.P., Friedman, M.J., Sengupta, A., Jankowski, M.K., & Holmes, T. (2000). PTSD and utilization of medical treatment services among male Vietnam veterans. Journal of Nervous and Mental Disease, 188, 496-504.
- Seabury SA, Reville RT, & Neuhauser FW. (2004). Working paper: Data for adjusting disability ratings to reflect diminished future earnings and capacity in compliance with SB 899. Rand Institute for Civil Justice. Retrieved from <http://www.rand.org/pubs>.
- Shafer, I., Barkmann, C., Riedesser, P., & Schulte-Markwort, M. (2006) Posttraumatic syndromes in children and adolescents after road traffic accidents – a prospective cohort study. Psychopathology, 39(4), 159-164.
- Shalev AY. (2002). Acute stress reactions in adults. Biological Psychiatry, 51(7), 532-543.
- Shalev AY, Freedman S, Peri T, Brandes D, Shar T, Orr SP, et al. (1998). Prospective study of posttraumatic stress disorder and depression following trauma. American Journal of Psychiatry, 155, 630-637.
- Sharp TJ & Harvey AG (2001). Chronic pain and posttraumatic stress disorder: mutual maintenance? Clinical Psychology Review, 21, 857-77. In Bryant RA (2008). Acute stress disorder consequent to motor vehicle collisions. In Duckworth, Iezzi, & O'Donohue (eds.) Motor Vehicle Collisions: Medical, Psychosocial, and Legal Consequences. Academic Press.
- Simpson J.S.A., Carlson L.E., & Trew M.E. (2001). Effect of group therapy for breast cancer on healthcare utilization. Cancer Practice, 9, 19-26.
- Slater, M.A., Doctor, J.N., Pruitt, S.D., & Atkinson, J.H. (1997). The clinical significance of behavioral treatment for chronic low back pain: an evaluation of effectiveness. Pain, 71, 257-263.
- Soo C & Tate R (2007). Psychological treatment for anxiety in people with traumatic brain injury. Cochrane Database of Systematic Reviews, 3, CD005239.
- Stallard, P., Velleman, R., & Baldwin, S. (1998). Children involved in road traffic accidents: Psychological sequelae and issues for mental health services. Clinical Child Psychology and Psychiatry, 6(1), 23-39
- Stephens T. & Joubert, N. (2001). The economic burden of mental health problems in Canada. Chronic Diseases in Canada, 22, 18-23.
- Sterling M, Jull G, Vincenzino B, & Kenardy J (2003). Sensory hypersensitivity occurs soon after whiplash injury and is associated with poor recovery. Pain, 104, 509-517.
- Sturms, L., van der Sluis, C., Stewart, R., Groothoff, J., ten Duis, H., & Eisma, W. (2005). A prospective study on paediatric traffic injuries: Health-related quality of life and post-traumatic stress. Clinical Rehabilitation, 19(3), 312-322

- Sweet, J.J., Peck, E.A., Abramowitz, C., & Etweiler, S. (2002). National Academy of Neuropsychology/ Division 40 of the American Psychological Association Practice Survey of Clinical Neuropsychology in the United States, Part II: Reimbursement experiences, practice economics, billing practices, and incomes. Archives of Clinical Neuropsychology, 18, 557-582.
- Sweet, J.J., Peck, E.A., Abramowitz, C., & Etweiler, S. (2003). National Academy of Neuropsychology/ Division 40 of the American Psychological Association Practice Survey of Clinical Neuropsychology in the United States, Part I: Practitioner and practice characteristics, professional activities, and time requirements. The Clinical Neuropsychologist, 16(2), 109-127.
- Taylor, H.G., (2004). Research on outcomes of pediatric traumatic brain injury: Current advances and future directions. Developmental Neuropsychology, 25, 199-225.
- Taylor, H.G., Yeates, K.O., Wades, S.L., Drotar, D., Klein, S.K., and Stancin, T. (1999). Influences on first year recovery from traumatic brain injury in children. Neuropsychology, 13, 76-89.
- Taylor, S., Federoff, I.C., & Koch, W.J. (1999). Posttraumatic stress disorder due to motor vehicle accidents: Patterns and predictors of response to cognitive-behaviour therapy. In E.J. Hickling and E.B. Blanchard (eds.). The International Handbook of Road Traffic Accidents and Psychological Trauma: Current Understanding, Treatment and Law. NY: Pergamon.
- Taylor, S., Federoff, I.C., Koch, W.J., Thordarson, D.S., Fecteau, G., & Nicki, R.M., (2001). Posttraumatic stress disorder arising after road traffic collisions: Patterns of response to cognitive-behavior therapy. Journal of Consulting and Clinical Psychology, 69, 541-551.
- Taylor, S., Thordarson, D.S., Maxfield, L., Federoff, I.C., Lovell, K., & Ogrodniczuk, J. (2003). Comparative efficacy, speed, and adverse effects of three treatments for PTSD: Exposure therapy, EMDR, and relaxation training. Journal of Consulting and Clinical Psychology, 71, 330-338.
- Turner, J.A., & Jensen, M.P. (1993). Efficacy of cognitive therapy for chronic low back pain. Pain, 52, 169-177.
- Van der Kolk BA, Roth S, Pelcovitz D, Sunday S, & Spinazzola J. (2005). Disorders of extreme stress: The empirical foundation of a complex adaptation to trauma. Journal of Traumatic Stress, 18, 389-399.
- Vanderploeg RD, Belanger HG & Curtiss G (2009). Mild traumatic brain injury and posttraumatic stress disorder and their associations with health symptoms. Archives of Physical Medicine and Rehabilitation, 90, 1084-1093.
- Walker E.A., Katon W., Russo J., Ciechanowski P., Newman E., Wagner A.W. (2003). Health care costs associated with posttraumatic stress disorder symptoms in women. Archives of General Psychiatry, 60(4), 369-74.
- Wallis BJ, Lord SM, & Bogduk N (1997). Resolution of psychological distress of whiplash patients following treatment by radiofrequency neurotomy: A randomized, double-blind, placebo-controlled trial. Pain, 73(1), 15-22.
- World Health Organization. (2004). World report on road traffic injury prevention. Geneva, Switzerland. Author.
- World Health Organization Department of Measurement and Health Information. (February 2009). Disease and Injury Country Estimates: Burden of Disease. Retrieved from http://www.who.int/healthinfo/global_burden_disease/estimates_country/en/index.html.

Yeates, K. O., (2010). Traumatic Brain Injury. In Yeates, K.O., Ris, M. D., Taylor, H.G., and Pennington, B.F. (Eds.), Pediatric Neuropsychology: Research, Theory and Practice, 2nd Edition. New York: The Guildford Press.

Ylvisaker, M., Adelson, D., Braga, L.W., Burnett, S.M., Glang, A., and Feeney, T. (2005). Rehabilitation and ongoing support after pediatric TBI: Twenty years of progress. Journal of Head Trauma Rehabilitation, 20, 90-104.