



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47435
Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations
Title: **Giving Back Through Work**
Primary Author: Alison Nicholson
Affiliation: Brain Injury Services
List of Authors: Alison Nicholson

Abstract:

BISHworks is an innovation that provides opportunities for participants who have sustained a brain injury to volunteer and develop relevant job skills while giving back to the community. When assessing need, the agency found that few participants were competitively employable; however, most saw work as being important to their self esteem and recovery. Although there are organizations in Hamilton providing employment supports for the disabled, they typically focus on physical disabilities and do not address issues pertinent to someone with an acquired brain injury (ABI) such as, fatigue, lack of initiation, motivation, and difficulties with impulsivity, problem solving, judgment, anger and social inhibitions. BISHworks offers three different work experiences: Community Volunteering, Office Team, and Catering Crew. Participants are matched to an activity to complement their skills and interests. In Community Volunteering, a team of four to six participants, accompanied by one staff member, work for various community organizations. Through volunteering, participants learn and enhance new and marketable employment skills and have the opportunity to give back to their community. Staff assist participants with problem solving and social skills and mentor strategies for motivation, initiation and anger management. Community organizations welcome the team and provide participants with immediate positive feedback. The community placements change periodically. Past and present placements are at Habitat for Humanity, a food bank, an out of the cold program, visiting seniors, an SPCA, and a pet store. The Office Team lends their time and effort to administrative projects for the agency as well as external businesses. The participants learn administrative related skills through tasks that challenge their fine motor skills, sequencing abilities, and executive functioning. The Office Team works out of our centrally located agency office and therefore lends its self to meet the needs of participant's who find it difficult to engage in community spaces due to their physical and/or behavioural challenges. Finally, the Catering Crew produces meals for in-house meetings and events. Participants develop skills related to food preparation, safety and presentation. This program mentors employable skills in the food and hospitality industry. Compensation for crew members is complimentary meals and leftovers to take home. In 2004 when the initiative started, 23% of the participants we were working or volunteering. Today, 50% of our participants are working or volunteering. When surveyed: ; 86% of participants felt Bishworks had improved their self-esteem ; 43% felt it had aided in their recovery ; 57% felt it had improved their learning ; 71% feel it had made them feel apart of their community ; 100% felt it had allowed them to help others ; 86% are satisfied with Bishworks



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47587
Type of Abstract: Review of the Literature
Title: **Promoting Continence in the Elderly**
Primary Author: Meta Lowe
Affiliation: Queensway Carleton
List of Authors: Meta Lowe, Roseline Chevalier, Judy Murphy, Joy Pelletier

Abstract:

The purpose is for nurse to possess adequate knowledge and tools to incorporate and efficiently complete a continence assessment in the elderly in their clinical practice. The significant impact of incontinence in the geriatric population needs to be highlighted. Nurses need to recognize their roles and responsibilities in advocating for continence management. The nurse will implement an assessment and treatment program for older adults with urinary incontinence to reduce the frequency and severity of urinary incontinence episodes. A literature review was completed using Ovid, CINAHL, The Ottawa Hospital, Best Practice Guidelines from the Registered Nurses Association (RNAO) and the Public Health Agency of Canada. Use of the Population Health Promotion Model (Public Health 1999) provides a holistic approach within the patient's community. Results indicate that 4.5-90% of females and 4.6-33% of males are prevalent to urinary incontinence. Individuals who are institutionalized or impaired the literature indicates a prevalence increase from 4.5-22%. There are few continence-promoting interventions that have been designed and implemented. Although there is a clear need for this type of intervention, several barriers exist. Many older adults do not report urinary incontinence to health care providers (Roberts et al., 1998). Some older adults have misinformation about the causes of incontinence and are uninformed about treatment options (Schnelle & Smith, 2001). Educating healthcare providers to heighten their awareness about urinary incontinence to improve screening and early treatment to enhance quality of life in the elderly (Samselle et al, 2004). Literature indicates that incontinence awareness amongst healthcare providers and patients needs to be enhanced. Incontinence is not a normal process of aging. Literature indicates that a Continence Program reduces the number of incontinent patients by 65%. Policies need to be implemented for continence assessment in all clinical settings to advocate consistency and continuity. More nurses are required with the expertise to promote continence. Incontinence can be cured, treated or more effectively managed.



Monday, March 9, 2009
8:30 a.m. - 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47639

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **THE BRIDGE FROM BLOORVIEW TO GENEVA: A JOURNEY OF DISCOVERY**

Primary Author: Shawna Wade

Affiliation: Bloorview Kids Rehab

List of Authors: Shawna E Wade, Sylvia Sikakane Sikakane, Monica Gemeinhardt, Laurie Norris

Abstract:

This year over 100 children and their families will receive a diagnosis of Autism Spectrum Disorder at Bloorview Kids Rehab and be referred to community agencies for supports and services. In 2007, Bloorview and the Geneva Centre for Autism, an international recognized centre of excellence in the field of autism, established a unique partnership. The intent of this partnership is to ensure families are successful in their journey across organizations and gain access to essential supports and services. Transforming our organizational relationship with a cross appointed social worker has assisted families to bridge from one place of care to another and begin to navigate the complex system of services in Toronto. A review of the literature detailed models of parent and professional partnerships as well as strategies for developing effective interagency collaborations. Throughout this review the following themes were present: transition planning, family-centered care and matching needs to services. Although interagency staff sharing was not identified, the emergent themes informed the framework for this innovative venture. Collaborative activities included; a number of exploratory meetings, development of an interagency contract for shared employment, design and implementation of a framework for bridging families, and ongoing project evaluation. The following outcome measurements were employed: The Impact on Families Scale (IFS), Family and Staff Satisfaction Surveys and the numbers of families bridged. Results indicate the IFS median scores decreased from pre to post bridge, which indicates an overall decrease in family stress. The mean scores on the Staff and Family Satisfaction Surveys ranged from 4 to 5 (5 being the maximum score), indicating high satisfaction with the bridge project. Additionally, 86% of newly diagnosed children and their families were successfully bridged in 07/08 year as compared to 63% the year prior to this initiative. This innovative partnership has effectively bridged a significant number of families, resulting in a seamless transition from diagnosis to interventions. In depth understanding and accurate timely communication have enhanced interagency relationships and transformed the transition process for children and families.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47647

Type of Abstract: Quantitative/Mixed Method Rehab Research at the Patient, Provider, Organizational, System or Policy Levels

Title: **Factors Influencing Inpatient Rehabilitation Length of Stay after Revision Hip Arthroplasty**

Primary Author: So Mei (Teresa) Yeung

Affiliation: West Park Healthcare Centre; University of Toronto

List of Authors: So Mei (Teresa) Yeung, Rajka Soric, Aileen M Davis

Abstract:

Purpose: To determine factors associated with inpatient rehabilitation length of stay (LOS) after revision hip arthroplasty. **Relevance:** Understanding determinants of LOS will aid planning in educating patients and healthcare resources. **Hypothesis:** N/A **Subjects:** The study included patients admitted to an inpatient rehabilitation program between 2002 and 2006 who had revision hip arthroplasty surgery. **Exclusion criteria** included infection, use of skin/muscle flaps during surgery or wound dehiscence. **Methods:** Patient and clinical data including LOS were collected retrospectively from the National Reporting System with supplementation by chart abstraction. Functional discharge criterion was safe independent or supervised mobility in patient's planned discharge destination. **Analysis:** Multivariate regression was used to identify variables predicting LOS at $p < .05$. **Results:** The mean age of this sample ($N=275$) was 69 years, 62% were female and the mean LOS was 29.6 days ($sd=16.4$, $min-max=4-91$). Factors that predicted longer LOS in descending order of strength were low admission score in the Functional Independence Measure (FIM) motor subscale ($p < .01$), female gender ($p < .05$), prior lower extremity surgeries in other joints ($p < .05$), multiple revisions (2 or more revisions, $p < .05$), limited support at home ($p = .06$), and non-/touch-weight- bearing restriction ($p < .08$). Acetabula revision surgery predicted shorter LOS ($p < .05$). These 7 factors together explained 29.2% of variance in LOS. **Discussion:** Both patient and surgery related factors affect inpatient LOS but among all factors admission FIM score was the strongest predictor. Resource allocated to optimize modifiable predictors will shorten inpatient LOS. Strategies such as early intensive functional training for patients at risk of longer LOS and pre-arrangement of support before surgery should be considered. Further studies are needed to validate the predictors of inpatient LOS. **Conclusion:** The determinants of rehabilitation LOS for inpatients after revision hip arthroplasty surgery support resource allocation and potentially refine models of care within rehabilitation setting.



Monday, March 9, 2009
8:30 a.m. - 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47669

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **Implementation of Common Best Practice Outcome Measures in Stroke Care in the Central South Region**

Primary Author: Sharon Gray

Affiliation: Central South Stroke Region

List of Authors: Sharon M Gray

Abstract:

On February 27th 2008, the Central South Stroke Region held a Clinical Rehabilitation Forum, with the goal of identifying a minimum set of outcome measures, chosen from a battery of best practice tools that had been pre-selected by the Ontario Stroke System. The Central South undertook this exercise as a step towards consistent provision of best practice treatment and assessment, and a common language that would support patient transition along the continuum, as well as a service provision model. Following this Forum, in order to facilitate these goals, three workgroups with OT's, PT's, Nurses and SLP's representing different locations on the continuum of stroke care as well as the various Districts within Central South were struck to examine the feasibility of implementing the tools. 28 different tools were identified and reviewed. At the conclusion of the final meetings, group members were asked to identify their preferred tools, which would be piloted, evaluated and implemented accordingly. The selected tools are: Berg Balance CAHAI MMSE Frenchay Aphasia Screening Test MOCA Stroke Impact Scale OSOT Perceptual Evaluation CMSA Line Bisection TUG Motor Free Visual Assessment Test Seven pilot sites representing the regional geographic diversity and continuum, were then identified. Training for each of the tools is being provided, by individuals including therapists from across the region, and each session will be video conferenced and archived, to maximize viewer access. In some cases, tools were also provided to pilot sites.. This training is now actively underway. The pilot is expected to begin on Dec 1st and run for three months. Staff perceptions of the tools effectiveness in supporting patient transfer will be evaluated at 4, 8 and 12 week intervals. Following this and pending the results of the evaluation, the training and tools will be rolled out across the region.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47673

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **Caregiver Wellness: Best Practice in Stroke Rehabilitation Care**

Primary Author: Nancy Boaro

Affiliation: Toronto Rehab

List of Authors: Nancy Boaro, Paul Asselin, Miranda Hong, Jackie Lymburner, Coreen Beaulne

Abstract:

The Best Practice Guidelines for Stroke Care, developed by the Heart and Stroke Foundation with the support of the Ontario Ministry of Health and Long Term Care, emphasize caregiver well being as an important part of stroke recovery. It is well established in the literature that informal caregivers have a critical role in providing care to stroke survivors who experience continuing disability after their stroke (Ski and O'Connell, 2007; Mackenzie et al., 2007). Further, a caregiver's ability to manage this role effectively is pivotal to stroke survivors experiencing success in their return home. In an effort to optimize caregiver wellness, demonstration project targeting the assessment of caregiver needs was conducted. This included a gap analysis, review of best practice literature, consultation with community experts and development and implementation of the Caregiver Wellness Assessment Tool (C-WAT). A sample of 55 caregivers of rehabilitation patients was identified to complete the C-WAT. The caregiver responses allowed for identification of individual caregiver needs. In addition, it was anticipated that the C-WAT would reveal trends that could inform programmatic changes, for example inpatient and family education. A comprehensive evaluation strategy was created to determine the effectiveness of the tool in achieving our objectives. Early recognition of caregiver concerns afforded clinicians the opportunity to work more effectively to support caregivers through the transition to discharge, thereby circumventing or mitigating negative discharge outcomes. Future applications of the C-WAT to other populations across the continuum of care should be considered.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47689

Type of Abstract: Review of the Literature

Title: **The Role of Physical Medicine Physicians in Rehabilitation: A Comparative History**

Primary Author: Eldon Loh

Affiliation: University of Alberta

List of Authors: Eldon Loh

Abstract:

Purpose: To compare and contrast historical accounts in the medical and humanities literature describing the relationship of physical medicine physicians to rehabilitation. As medical history accounts in medical literature tend to be descriptive and linear, and history of medicine accounts in humanities literature tend to explain events through a particular theory, it was hypothesized that the two types of accounts would portray the role of physical medicine physicians in rehabilitation differently. **Relevance:** Awareness of the history of physiatry through humanities literature could increase understanding of administrative, political, and interprofessional factors that influence rehabilitation delivery. **Methods:** Literature search for articles focusing on the development of Physical Medicine and Rehabilitation in both medical (MEDLINE) and humanities (JSTOR, History of Medicine, Science and Technology) Databases. The author compared the characteristics of articles in medical and sociological literature. **Results:** Historical accounts in medical literature were celebratory in nature and interpreted events within the context of the modern specialty. They portrayed the techniques of physical medicine as most relevant to rehabilitation and therefore imply that specialty development was inevitable. Accounts in sociological and humanities literature emphasized the organizational conflicts and sociopolitical factors that drove specialty formation. They portrayed the inclusion of rehabilitation within physical medicine as dependent on the ability of physical medicine physicians to capitalize on political events and to use appropriate administrative strategies. **Conclusions:** Medical specialty development, including that of Physical Medicine and Rehabilitation, is partially influenced by sociopolitical events and administrative strategies. The administrative principles that underlie past strategies to secure the role of physical medicine physicians within rehabilitation continue to be relevant. Strategies for securing new fields within rehabilitation (cancer, HIV, interventional procedures) could therefore be enhanced by historical awareness.



Monday, March 9, 2009
8:30 a.m. - 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47703

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **Redrawing the Wonder Years: Functional, Context-Sensitive Intervention in ABI**

Primary Author: Heather Crawford

Affiliation: Children's Hospital of eastern Ontario

List of Authors: Heather Crawford, Maureen Jones

Abstract:

Purpose or Research Hypothesis Twenty years of program development and research has shifted to support a rehabilitation framework that integrates interventions across all domains of functioning. A comprehensive overview of functional, context-sensitive assessment and intervention developed by Ylvisaker and Feeney serves as the foundation for long-term rehabilitation programming for children and adolescents in a tertiary care center. **Relevance** The increased survival rate of children and adolescents with ABI has facilitated the emergence of comprehensive rehabilitation settings and treatment approaches emphasizing the productive functioning of the total child after injury. Ylvisaker and Feeney have developed a multicomponent framework for children and adolescents with cognitive, behavioral and executive or self-regulation impairment associated with ABI. **Context-sensitive intervention** highlights integration across many domains of functioning, and is delivered in the context of meaningful activities and routines in the child's life. Integral components of this model are promoted within child life programming including; prevention of challenging behaviors with positive setting events; behavioral momentum and provision of supports for success; communication alternatives to challenging behaviors; opportunities for choice-making and control within activities **Analysis** Brain injury rehabilitation is more than a brief service delivered in a medical setting; it is an ongoing process to help the child, adolescent, family achieve real life goals in real world settings. **Results/Findings** Dramatic individual differences in outcome after ABI necessitate individualized evidence-based assessment and intervention. The child may experience good initial recovery but have difficulty negotiating new developmental challenges, especially with cognitive and psychosocial maturation.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47713
Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations
Title: **IMPROVING QUALITY OF IMS WORKLOAD DATA**
Primary Author: Gert Montgomery
Affiliation: Bloorview Kids Rehab
List of Authors: Gert Montgomery, Judy Maheu

Abstract:

Consistent and accurate workload data from all clinical disciplines is essential for program planning, resource allocation and reporting requirements to the Ministry of Health and Long Term Care. On orientation, Information Systems (IS) train clinicians on electronic workload entry and Professional Practice Leaders educate on discipline specific applications of workload definitions. However overtime, the meaning and interpretation of the MIS definitions often become misinterpreted/redefined resulting in inconsistent data across clinician groups. Therefore, the information available to inform important program and organizational decisions may be inaccurate. Following the model for improvement methodology, a pre and post study was conducted to determine the current accuracy level of workload entry and whether training and discussion would result in improved quality (accuracy and consistency) of workload data entered. Professional Practice Leaders in collaboration with the IS Applications Specialist developed, tested and refined generic workload scenarios using the required technology. Clinicians from all disciplines completed a pre- test using the generic workload scenarios. Each clinician received direct feedback about their scores and their disciplines' average scores. Discipline specific training was provided to clarify workload definitions and processes. The same clinicians completed a different generic post-test in April 2008. A comparison analysis of mean pre and post test scores was completed. Results indicate discipline specific training/discussion increased knowledge of workload data definitions, categories and entry options by all clinicians and improved the quality (accuracy and consistency) of workload data entry. Changes in scores for 5 indicators: attendance days, client minutes, non- client minutes, telephone contacts and education for UT OT/PT/SLP students are graphed. Limitations of the study, lessons learned, ongoing improvements are outlined. Staff felt the initiative was worthwhile and increased their awareness of workload definitions. They appreciated having their concerns about workload acknowledged. Recommendations : Develop supplemental information to clarify ambiguities identified by the clinicians e.g. revision of MIS manual; Coordinate annual mandatory workload training, involving E-learning, on-line quiz; Identify ways to reduce complexity of data entry; Establish a discipline specific 'resident expert' on workload entry.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47719
Type of Abstract: Review of the Literature
Title: **SARS Patients: A Review of the Psychological Impact**
Primary Author: Paula Gardner
Affiliation: St. John's Rehab Hospital
List of Authors: Paula Gardner, Parvaneh Moallem, Mirhosseini Maral

Abstract:

This paper reviews the existing literature on the psychological impact of Severe Acute Respiratory Syndrome (SARS) on patients who contracted the illness following the outbreak of this atypical pneumonia condition. SARS was found to be caused by a novel strain of the corona-virus causing an infectious illness that spread to 26 countries in 2002/2003, infecting over 8000 people, approximately 800 of whom died. A literature search was conducted on available electronic databases, including the databases of MEDLINE and PsycINFO. The search revealed a relatively small number of articles published on the psychological symptoms and experience of patients themselves (Total of 36) relative to articles on either the physical effects of SARS, or its impact on the wider community. No studies were found that assessed the emotional impact more than 1 year post-infection. A small number of studies published in Chinese were not included since they have not, as yet, been translated into English. Most studies used a self-report method of appraisal, either standardized measures or questionnaires of their own design. A small number employed hospital chart reviews. Themes that emerged included worry about infecting others, elevated emotional distress, mood changes, symptoms of posttraumatic stress disorder, feelings of stigmatization and, some psychiatric complications such as psychotic symptoms and presentations. Results and Conclusion: The studies reviewed consistently reported high rates of emotional distress in patients up to 1 year post-infection. SARS remains a new disease and the course of its development, both physically and emotionally, is still unfolding as time progresses. Longer-term follow-up studies to determine the course of SARS patients' psychological status will be informative in helping to guide treatment interventions. This, in turn, will help to inform the needs for future emergent, possibly similar, viral infections.



Monday, March 9, 2009
8:30 a.m. - 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47723

Type of Abstract: Quantitative/Mixed Method Rehab Research at the Patient, Provider, Organizational, System or Policy Levels

Title: **Psychological Effects of SARS on Survivors: A Longitudinal Study**

Primary Author: Parvaneh Moallef

Affiliation: St. John's Rehab Hospital

List of Authors: Parvaneh Moallef, Paula Gardner, John Patcai

Abstract:

Little is known about the long-term psychological consequences of SARS on patients who survived the illness. The SARS outbreak in 2003 infected approximately 8100 people worldwide and killed almost 800 people. SARS is an unusual and contagious form of pneumonia, caused by a novel strain of the corona-virus. The present study aimed to examine the early and long-term psychological effects of SARS on patients who received physical and/or psychological treatment at St. John's Rehab Hospital after contracting the illness in 2003. Method: 40 SARS patients were included in the study and completed self-administered questionnaires pertaining to their psychological health status, wellbeing and general health. Patients completed these questionnaires twice within a three-year time period: initially in 2004, shortly after they had recovered from the acute phase of SARS, and again three years later in 2007. Results and Conclusion: Preliminary results showed that, as a group, post-SARS patients reported persistent and significant levels of depression and posttraumatic symptoms at both testing times (2004 and 2007). Furthermore, results indicated that not only patients' level of emotional distress remained elevated for the most part over time; there was a significant increase in the number and the severity of reported symptoms 3 years later. This apparent persistence and elevation in emotional distress among SARS survivors is both unexpected and alarming. Since patients had seemingly recovered from the acute phase of the illness three years prior. More in-depth investigation into the nature of their psychological symptoms can help identify the underlying factors that may be contributing to post SARS patients' levels of distress. The present findings have important implications for the rehabilitation of SARS patients and point out the value of availability of psychological services during the rehabilitation phase. This knowledge can also provide insight into the potential long-term negative psychological effects of infectious diseases.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47725

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **WHOQOL- BREF: Not a Meaningful Measure of Rehabilitation Success**

Primary Author: Barbra Kubilius

Affiliation: St. Peter's Hospital

List of Authors: Barbra Kubilius, Jackie Fox, Rebecca Marriage, Bonnie Mc Innes, Margaret Gudgeon, Anne Smith, Yvette Bowry, James Genga

Abstract:

In late 2005, our rehabilitation team endeavoured to demonstrate that our program made a difference for adults that require slow-paced inpatient rehabilitation. A review of the literature identified the World Health Organization Quality of Life (WHOQOL)-BREF instrument. This instrument considers four domains: physical health, psychological health, social relationships and environment. From January 2006 to December 2007, the WHOQOL-BREF was administered to patients, with 30 surveys completed pre and post rehabilitation. Surprisingly, no change in scores occurred for the 30 surveys. The team surmised that a larger sample size was unlikely to reflect different results. These results raised many questions for our team. Do the results indicate a need for a valid tool for quality of life measures for rehabilitation patients? Or, is it possible that there may be no increased quality of life with rehabilitation patients? Would it be more meaningful to measure patient satisfaction with the program or functional change over time? The team concluded that quality of life may not be known or measured validly during transition points. Although the end of inpatient rehabilitation is a natural endpoint from the perspective of the rehabilitation team it is a false end point for our patients. It may be useful to assess QOL post discharge and whether or not there is a significant difference for patients who reached their desired discharge location. Future research should focus on assessing quality of life post discharge from an inpatient setting, or on correlating functional gains with the QOL results. It may also be meaningful to compare expected discharge location with actual discharge location and QOL measures.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47731

Type of Abstract: Review of the Literature

Title: **An Update of the Systematic Review of the Rehabilitation of Moderate to Severe Acquired Brain Injuries-Version 4**

Primary Author: Jo-Anne Aubut

Affiliation: Parkwood Hospital (SJHC)

List of Authors: Jo-Anne Aubut, Robert Teasell, Shawn Marshall, Nora Cullen, Mark Bayley, Laura Reese, Margaret Weiser, Marureen Hildritch, Corbin Lippert, Pat McCabe, Anna McCromick, Lilia Golverk, Matthew Meyers, Linh Tu

Abstract:

Objective: To conduct a systematic review of the rehabilitation literature of moderate to severe acquired brain injuries (ABI) from traumatic and non-traumatic causes. **Methods:** Several databases were searched for articles related to interventions used to assist individuals with an ABI. MEDLINE/PUBMED, CINAHL, EMBASE, and PsycINFO were among the databases searched, although several others were also used. The review included randomized controlled trials (RCTs), non-RCTs, cohort, case-control, case series, pre-post and post interventional studies related to intervention strategies used to assist those with an ABI recover. Studies where at least 50% of the population included patients with an ABI were included. **Analysis:** Articles were scored for quality using either the Downs and Black or the Physiotherapy Evidence Database Scale (PEDro) evaluation tools. A level of evidence using a modified Sackett scale was assigned to each intervention. **Results:** Of the titles selected, approximately 3000 abstracts were chosen for detailed review, with 579 meeting inclusion criteria. In total 167 RCTs were selected and of these 80 were considered strong Level 1 evidence. The majority of RCTs focused on interventions used in the acute phase of recovery (n=42), those addressing cognitive deficits (n=30), dysphagia and nutrition (n=15) and sensory motor deficits (n=13). Of the remaining studies, the majority were pre/post, case series or single subject interventions (n=248), followed by case-controls (n=41) and case studies (n=56). **Conclusions:** Despite the large body of literature addressing ABI rehabilitation interventions, only 28% were found to be RCTs and less than half of those selected were considered strong evidence. Therefore strong levels of evidence were limited or not possible for most areas of ABI rehabilitation. There appears to be a need to improve upon the methodological quality of ABI rehabilitation research. **Key Words:** Acquired Brain Injury, Traumatic Brain Injury, Rehabilitation, Evidence-Based Review This work was supported by the Ontario Neurotrauma Foundation.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47733

Type of Abstract: Review of the Literature

Title: **Pressure Ulcers following Spinal Cord Injury: A Systematic Review of Prevention and Treatment Interventions**

Primary Author: Mary Ann Regan

Affiliation: Parkwood Hospital

List of Authors: Mary Ann Regan, Swati Mehta, Robert W Teasell, David Keast, William B Mortenson, Jo-Anne L Aubut, Brianne L Foulon

Abstract:

Purpose: To systematically review evidence on the prevention and treatment of pressure ulcers following a spinal cord injury (SCI). **Relevance:** For individuals with a spinal cord injury, pressure ulcers negatively impacts quality of life; disrupts rehabilitation, vocational and educational pursuits and community reintegration; leads to increased hospital admission rates and longer lengths of stay. **Methods:** Systematic review of relevant literature published between 1980-June 2008 was conducted using multiple data bases and SCIRE methodology. 34 articles met inclusion criteria whereby there were 3 or more subjects and 50% of subjects had SCI (19 prevention; 15 treatment). **Analysis:** A quality assessment of each article was done using Physiotherapy Evidence Database Scale (PEDro) for RCTs and Downs & Black for non-RCTs. 5 levels of evidence based on modified Sacket scale, were used to summarize the data. **Results:** Of the 19 prevention studies reviewed, only one was an RCT. Only one looked at direct indicators of effectiveness such as a reduction in pressure ulcer incidence. There were 15 treatment studies, 8 of which were RCTs. Five of the studies had level 1 or 2 evidence. Electrical stimulation had the most research evidence and was supported by the most level 1 evidence and had the most research evidence. **Discussion:** Many of the studies reviewed, had small numbers of subjects, had not been replicated and were conducted before the year 2000. Many of the treatment studies used different methods for staging pressure ulcers making it difficult to compare treatment effects. **Conclusions:** Few prevention interventions were supported by solid research and those that were, did not include evidence that the intervention decreases the incidence of pressure ulcers. There was greater evidence regarding treatment interventions for existing pressure ulcer post SCI but even here the evidence was lacking for many interventions. Research needs to focus on providing evidence that both current and new interventions lead to a reduction in the occurrence of pressure ulcer formation and better treatment of developed pressure ulcers.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47735

Type of Abstract: Review of the Literature

Title: **Fatigue and sleep disorders post ABI**

Primary Author: Jo-Anne Aubut

Affiliation: Parkwood Hospital (SJHC)

List of Authors: Jo-Anne Aubut, Shawn Marshall, Corbin Lippert, Robert Teasell, ERABI team

Abstract:

Purpose: To conduct a systematic review of interventions used to assist those dealing with fatigue following a moderate to severe acquired brain injury (ABI). **Methods:** The following databases were searched for articles: interventions used to MEDLINE/PUBMED, CINAHL, EMBASE, and PsycINFO. This included randomized controlled trials (RCTs) and all non-RCTS. Studies that investigated the effects of fatigue post ABI were also included. Data extracted included demographic information, the description of the intervention and study results. Both pharmacological and non-pharmacological interventions were included in this review. **Analysis:** Articles that included an intervention were scored for quality using either the Downs and Black or the Physiotherapy Evidence Database Scale (PEDro) evaluation tools. A level of evidence using a modified Sackett scale was assigned to each intervention. **Results:** Results of this review indicate there is now greater identification of fatigue post ABI. There was Level 3 evidence from 2 case-control studies, one identifying a decrease in vigilance in those who have sustained an ABI and the other suggesting that those who sustain an ABI experience a poorer quality of life as a result of their injury. There is Level 1 evidence from one study to suggest that Modafinil is not effective in treating fatigue post ABI. When looking at the pharmacological treatments for sleep disorders post ABI, Level 1 evidence was found in one study examining the benefits of using lorazepam and zopiclone for insomnia post ABI and Level 2 evidence was found in a study looking at using methylphenidate for sleep disorders post ABI. **Conclusion:** Although research indicates that fatigue symptoms and sleep disorders appear to be increased in those who sustain an ABI/TBI, only a few treatments discussing this were found. Further research needs to be done looking at the effectiveness of both the pharmacological and non-pharmacological treatments. **Key Words:** fatigue, sleep disorders, acquired brain injury, interventions This work was supported by the Ontario Neurotrauma Foundation.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47737

Type of Abstract: Review of the Literature

Title: **Effectiveness of Electrical Stimulation Therapy in Spinal Cord Injury: A Systematic Review**

Primary Author: Swati Mehta

Affiliation: Parkwood Hospital

List of Authors: Swati Mehta, Robert W Teasell, Brianne L Foulon, Jo-Anne L Aubut, Darren Warburton, Sandra Connolly, Dalton L Wolfe, Jane T Hsieh, Mary Ann Regan, Tania Lam, Andrei Krassioukov, B. Cathy Craven

Abstract:

Purpose: Systematically review the effectiveness of electrical stimulation (ES) based interventions in the spinal cord injured (SCI) population. **Methods:** A systematic review was conducted through multiple databases (MEDLINE, PUBMED, CINAHL, EMBASE and PsycINFO). Four authors reviewed articles to determine inclusion eligibility. Only articles meeting specific criteria were included: 1) human subjects; 2) SCI population greater than 50%; 3) at least three subjects with SCI. **Analysis:** Selected articles were grouped and assigned levels of evidence using a modified Sackett scale and ranked according to their strength of evidence. Randomized controlled trials (RCTs) were assessed using the Physiotherapy Evidence Database tool and the Downs and Black tool, while non-RCTs were assessed using the Downs and Black tool. **Results:** Of the 149 articles assessed, only 28 were studies with level 1 or 2 evidence and 14 of these were RCTs. Research on the effectiveness of ES therapy was predominantly seen in: improving cardiovascular fitness (level 4=21); enhancing upper limb functioning through neuroprosthesis (level 4=18); improving bladder functioning (level 2=1; level 4=14); treating spasticity through afferent stimulation (level 1=2, level 2=1, level 4=7); and healing pressure ulcers (level 1=2, level 2=2). Other areas of research included: lower limb, bowel, orthostatic hypotension, and bone density. **Discussion:** The strongest evidence for electrical stimulation's therapeutic ability was seen in healing pressure ulcers and treatment of spasticity through afferent stimulation. Electrical stimulation has been studied in a number of conditions post SCI. Most of the research involves small sample sizes and is limited in its methodological quality. **Conclusions:** Electrical stimulation shows great promise in its therapeutic use for people with SCI. However, clinical trials with large sample and an appropriate control are required to fully establish its therapeutic effectiveness prior to being adopted as standard care



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47739

Type of Abstract: Review of the Literature

Title: **Communication Deficits Following Acquired Brain Injury- Intervention and Treatments**

Primary Author: Jo-Anne Aubut

Affiliation: Parkwood Hospital (SJHC)

List of Authors: Jo-Anne Aubut, Penny Welch-West, Connie Ferri, Robert Teasell

Abstract:

Purpose: To review evidence-based research concerning communication disorders following a moderate to severe acquired or traumatic brain injury (ABI/TBI). **Methods:** The following databases were searched for articles relating to the interventions used to assist individuals who are experiencing communication disorders resulting from an ABI: MEDLINE/PUBMED, CINAHL, EMBASE, PsycINFO and Web of Science. This review included randomized controlled trials (RCTs), and non-RCTS related to strategies used to assist those with a communication disorder following an ABI. **Analysis:** Articles were scored for quality using either the Downs and Black or the Physiotherapy Evidence Database Scale (PEDro) evaluation tools. A level of evidence using a modified Sackett scale was assigned to each intervention. **Results:** Results from the following study were divided into 4 areas: individual studies of communication based therapy for ABI; augmentative and alternative communication (AAC); training communication partners; and intervention for disordered pragmatic skills. Of the 20 studies reviewed only 5 were RCTs and only 2 of those were considered strong evidence. Level 1 evidence was found when looking at the effects of teaching those with an ABI to communicate “yes/no” responses after undergoing consistent training and environmental enrichments. When investigating augmentative communication interventions Level 4 evidence was found to suggest that provision of organizational strategies to those with ABI can improve efficiency and accuracy of augmentative communication device use. Level 2 evidence was found when looking at the effectiveness of training the communication partners of those who have sustained an ABI. Looking at one RCT examining the benefits of how social communication skill training improves communication skills Level 1 evidence was found. **Conclusions:** Overall very few of the treatments discussed were supported by strong evidence; therefore it would appear more rigorous research needs to be conducted to investigate the treatments that are currently available. **Key Words:** communication deficits, interventions, acquired brain injury This work was supported by the Ontario Neurotrauma Foundation.



Monday, March 9, 2009
8:30 a.m. - 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47741

Type of Abstract: Knowledge Transfer and Exchange Research or Implementation Projects

Title: **The Impact of Pharmacologic Treatment of Post-Stroke Depression on Functional Recovery: A Review**

Primary Author: Katherine Salter

Affiliation: Parkwood Hospital

List of Authors: Katherine Salter, Norine Foley, Robert Teasell

Abstract:

RELEVANCE: The 11th edition of the Stroke Rehabilitation Evidence-Based Review (SREBR; Teasell et al. 2008) included 23 studies examining the influence of depression on physical function and recovery, all of which demonstrated an association between depression and functional status. In general, this body of literature suggests that post-stroke depression (PSD), identified acutely or within the first 3 months following stroke, has an adverse effect on both short and long-term physical recovery. **OBJECTIVE:** To examine evidence from published reports of randomized controlled trials regarding the impact of pharmacologic treatment of post-stroke depression (PSD) on functional recovery. **METHODS:** A literature search was conducted for the years 1985-2007 to identify randomized controlled trials evaluating the impact of pharmacologic treatment of post-stroke depression on functional recovery. Each study was evaluated for methodological quality. Data extracted included study n's, time since stroke event, intervention descriptions, method and timing of assessment, results pertaining to the outcome of functional recovery. **ANALYSIS:** Given heterogeneity in outcome assessment and reporting of results, pooled analysis was not possible. Therefore, results are reported descriptively. **RESULTS:** Of 6 trials meeting all inclusion criteria, five commenced treatment within the first 6 weeks following stroke. Although most studies reported improvement over time for all groups, only two reported significantly greater gains in function associated with treatment, but only for patients with a positive dexamethasone suppression test. **DISCUSSION/CONCLUSIONS:** Although treatment with antidepressant medications was associated with significant improvements in depression in the studies identified here, a corresponding improvement in functional recovery was not noted in the majority of studies or for the majority of patients. Despite the reported association between PSD and poor rehabilitation outcomes, there is little evidence that pharmacological treatment is associated with improvement in functional recovery.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47743

Type of Abstract: Knowledge Transfer and Exchange Research or Implementation Projects

Title: **The Prevention of Post-Stroke Depression: Does Pharmacotherapy Work?**

Primary Author: Katherine Salter

Affiliation: Parkwood Hospital

List of Authors: Katherine Salter, Norine Foley, Robert Teasell

Abstract:

RELEVANCE: Approximately one-third of all stroke survivors will experience post-stroke depression (PSD) in the first year following the stroke event. The presence of PSD has been associated with decreased functional status and social participation, and increased cognitive impairment and risk for mortality. Given the negative impact of post-stroke depression and the success of pharmacologic intervention in the treatment of PSD, the effectiveness of these agents in the prevention of PSD should be assessed. **OBJECTIVE:** To examine evidence from published reports of randomized controlled trials regarding the effectiveness of pharmacologic intervention in the prevention of post-stroke depression. **METHODS:** A literature search was conducted to identify randomized controlled trials evaluating the effectiveness of pharmacologic treatment on prevention of PSD. Each study was evaluated for methodological quality. Data extracted included study n's, time since stroke event, intervention descriptions, method and timing of assessment, and reported results. **ANALYSIS:** Pooled analyses of data were conducted. **RESULTS:** Six RCTs were included in the present study. Overall, individual studies offered conflicting evidence; however, a trend toward protection against depression appeared to be present. Pooled analysis of data from observations from a total of 583 patients demonstrated a significantly reduced risk for depression associated with pharmacological treatment (OR=0.40; 95% CI 0.25, 0.65). **DISCUSSION/CONCLUSION:** There is evidence that early initiation of antidepressant therapy, in non-depressed stroke patients, is associated with reduced risk for the development of post-stroke depression. Further study is required to evaluate optimal timing for initiation of therapy as well as duration of treatment.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47747
Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations
Title: **An Accessible Nutrition Program for Individuals with Aphasia**
Primary Author: Fatima Cabral
Affiliation: Aphasia Institute
List of Authors: Fatima Cabral, Susan Watt, Laura Dickey

Abstract:

Presentation Type: Poster Title: An Accessible Nutrition Program for Individuals with Aphasia Authors: Fatima Cabral, Laura Dickey, Susan Watt Purpose: To provide a nutrition information program based on Canada's Food Guide for people with aphasia. Relevance: Individuals with aphasia often have difficult accessing basic health and secondary prevention information because of their communication impairments. Both Ontario and Canadian Best Practice Guidelines for Stroke point to the importance of dietary modification as a secondary preventative measure. Methods: Clients were grouped according to aphasia severity and the amount of communication support required. Simplified pictographic materials were created to promote understanding of basic nutritional information and the value of food selection in stroke prevention. These materials were discussed in small groups in weekly 1 ½ hour sessions over an eight week period. Clients set personal goals, discussed eating habits and food choices. Analysis: Twenty-four clients have participated in the program. Questionnaires about eating habits and nutrition knowledge were administered before and after the program. Results indicate that all participants showed improvement in at least two nutritional areas. There was a statistically significant increase in fruits and vegetables consumption. There was not a significant change in unhealthy snacking, salt and butter intake. Participants requested more information on weight management, fats, low sodium foods and cholesterol. All clients demonstrated a greater knowledge of nutrition principles and had the desire for more information. Discussion/Observations: Individuals with aphasia had both the motivation and ability to modify their dietary habits. Further modifications to materials and additional time were required to accommodate severe aphasia. This suggests that people with aphasia could not otherwise obtain such information in their communities. Conclusion: This program demonstrated the benefits of providing accessible nutrition information and the need for further development of secondary preventative resources. Next steps include further development of resources and supports for other lifestyle modifications. Poster Category: Rehabilitation-related Practices or Organizational Innovations

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47757

Type of Abstract: Quantitative/Mixed Method Rehab Research at the Patient, Provider, Organizational, System or Policy Levels

Title: **Assessing the relationship between chronic levels of cortisol, depression and perceived stress in patients with coronary artery disease**

Primary Author: Yekta Dowlati

Affiliation: Univeristy of Toronto

List of Authors: Yekta Dowlati

Abstract:

Purpose: Elevated plasma cortisol levels have been detected in association with both cardiovascular risk factors and major depression. Depression occurs in 18%-45% of coronary artery disease (CAD) patients. Traditional single or 24-hour measurements of cortisol may not reflect ongoing elevations. A significant positive correlation between hair cortisol levels and chronic stress has been demonstrated, suggesting that cortisol deposition in hair reflects long-term HPA activity. We hypothesized that levels of cortisol in hair would be higher in depressed versus non-depressed coronary artery disease patients finishing one year cardiac rehabilitation. **Methods:** 20 mg hair samples of 3 cm length (about 3 months of growth) were collected from 16 depressed (DSM-IV criteria) and 28 non-depressed CAD patients from the Toronto Rehabilitation Institute Cardiac Facility at completion of rehabilitation. **Results:** Cortisol concentrations were compared in depressed versus non-depressed patients taking into consideration age and gender using analysis of covariance. Depression ($p=0.05$, $F=4.00$, $df=40$) and being male ($p=0.001$, $F=18.96$, $df=11$) were associated with higher levels of cortisol. There was no significant association between subjective levels of stress (Perceived Stress Scale) and cortisol ($p=0.35$, $\beta=0.15$) in a linear regression when taking gender and age into account. **Conclusion:** Hair cortisol is the first long-term biological measure of HPA axis stimulation and this has never been studied in those with CAD. Depression in CAD patients finishing cardiac rehabilitation is associated with higher levels of cortisol compared to non-depressed, when controlling for age and gender. Hair cortisol deposition in hair can provide important information on the relationship between ongoing HPA axis stimulation and mood symptoms in CAD.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47763

Type of Abstract: Quantitative/Mixed Method Rehab Research at the Patient, Provider, Organizational, System or Policy Levels

Title: **ASSESSING THE HOME ENVIRONMENT (THE 'AT HOME' STUDY) in Patients Undergoing Hip and Knee Replacement**

Primary Author: Colleen Kilroy

Affiliation: Sunnybrook Holland Orthopaedic and Arthritic Centre

List of Authors: Colleen Kilroy, Deborah Kennedy, Linda Woodhouse, Cecilia Nguyen, Patricia Dickson, Betty Rivington-Law, Sheila Ritcey, Paul Stratford

Abstract:

Purpose: Nowadays most patients undergoing hip and knee replacement are discharged home 3-5 days following surgery. We developed a self-report questionnaire for use to determine whether the home environment and support systems are adequate to safely discharge these patients home. The purpose of the 'AT HOME' study was to compare accuracy of the patient self-report questionnaire to the findings during a preoperative in-home visit by a therapist. **Relevance:** Considering the growing number of joint replacements and limited resources, effective client-focused strategies to improve discharge planning and rehabilitation care are needed. **Subjects:** Twenty-five participants consented and were assessed preoperatively. All had a diagnosis of osteoarthritis (13 hips, 12 knees); mean age 65.2+10.3 years and BMI 29+ 6.1 kg/m². **Methods:** The 'Home Environment and Supports Questionnaire' was completed by each participant and their therapist during a preoperative in-home visit. A Clock Draw, Profile of Mood States Questionnaire, and Timed Up and Go test were also performed preoperatively. **Analysis:** Univariate analyses were run for all descriptive variables using SPSS software. For pertinent variables, 2x2 contingency tables were calculated and percentage agreement evaluated using Kappa statistics. **Results/Findings:** Overall, there was moderate to substantial agreement (Kappa 0.41-0.73) between the patient and therapist regarding support for activities of daily living. However, patients' and therapists' responses to questions about concerns expressed differed in over 30% of the cases. Agreement was only fair to moderate for key functional abilities such as the ability to lift and carry 10 lbs (mean+95% Confidence Interval: 0.23+0.38) or walk 400 meters (0.58+0.32), and 12% of the patients had below normal clock drawing scores. **Discussion:** Preliminary findings from this pilot study support that a self-report questionnaire alone may not be sufficient in determining the home environment in all patients. **Conclusions:** A larger study is needed to determine which patients undergoing joint replacement require a preoperative in-home assessment to facilitate safe postoperative discharge planning.



Monday, March 9, 2009
8:30 a.m. - 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47771

Type of Abstract: Knowledge Transfer and Exchange Research or Implementation Projects

Title: **Understanding the Impact of Research Evidence into Practice: A Grant Funder's Perspective**

Primary Author: Carol-Anne Sullivan

Affiliation: Ontario Neurotrauma Foundation

List of Authors: Carol-Anne M Sullivan, Tara Jeji

Abstract:

PURPOSE: The purpose of this study is to evaluate the impact of new research outcomes in facilitating knowledge translation into clinical practice. This poster presentation illustrates a rehabilitation research grant's implementation and translational processes. **RELEVANCE:** Quantifying health research utilization is of growing importance for health research funding organizations. The organization as a neurotrauma clinical research funder has developed a research framework that guides how the research investments are made. It assists in setting research agenda with a focus on capacity building (researchers), knowledge translation and sustainability. These key elements are integrated into the research programs from the onset to ensure necessary conditions and partnerships are embedded for the research outcomes to have optimum opportunity in addition to scientific contributions to impact clinical practice. **DESCRIPTION:** Hanney et. al.'s (2004) evaluative framework was adopted. This payback logic model approach identifies knowledge translational processes associated within grants and means of assessment and identification of the components of research impact. **ANALYSIS:** Case study analyses were applied. Data was collected by archival file reviews of grant reports. Triangulation of data was done with Principal investigators. **RESULTS/FINDINGS:** Findings reveal the framework that illustrates how effective implementation strategies are understood, adopted and employed. The processes that facilitate research into practice will be reported. **DISCUSSION/OBSERVATION:** The study demonstrates significant knowledge translational outcomes to date. Systematic engagement with stakeholders such as practitioners, administrators, policy makers and end-users/consumers is crucial in facilitating effective research translation. **CONCLUSION:** Neurotrauma leads to great personal and economic loss. A greater understanding of the impact of new knowledge into improved clinical practice together with the development of guidelines that facilitate active engagement of partners is beneficial for knowledge translation. A clearer understanding and expectation between principal investigators and funding agencies would lead to economic leverage and improved clinical practice and healthcare management.



Monday, March 9, 2009
8:30 a.m. - 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47773

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **A Coding System for Ambulatory Care Diagnoses at a Rehabilitation Hospital**

Primary Author: Marie Disotto-Monastero

Affiliation: St. John's Rehab

List of Authors: Marie Disotto-Monastero, Margaret Furman

Abstract:

A Coding System for Ambulatory Care Diagnoses at a Rehabilitation Hospital Marie DiSotto-Monastero, Margaret Furman St. John's Rehab Hospital, Toronto, Ontario. Purpose: To develop a standardized internal coding system for ambulatory care services that can provide data to support and facilitate management decision making, program planning and evaluation, billing processes, and research. Relevance: Currently there is no mandatory provincial coding system for outpatient rehabilitation that could help describe comparatively services provided, follow-up patients across the continuum of care, and to provide indicator specific reports by diagnosis or programs that would be useful for decision making, program planning and evaluation, and research. Methods Materials and Principles: An interdepartmental project team was established and included clinical decision support, health information services, outpatient programs, professional practice, and computer application specialist. An external environmental scan was conducted, and the Inpatient Rehab coding system of the National Rehabilitation Reporting System (NRS) was reviewed and adapted to our outpatient services. New additional codes were created to capture the outpatient referrals and were incorporated into the existing Admission, Discharge and Transfer (ADT) application, including a program indicator list and standardized internal and external reports that incorporated the diagnosis into the workload. Results: 87 new codes and eight new monthly indicator reports were created by the program. The reports include: number of admissions and discharges, average length of stay, number of new referrals, average days waiting for services, number of attendance, total workload provided by disciplines, and monthly statistics of rehabilitation services provided to Workplace Safety and Insurance Board (WSIB) clients. Discussion/Observations: The coding system has been instrumental in designing special request reports, conducting specific program evaluations, assisting with Ambulatory Case Costing project and to streamline the billing process for Market Service. Conclusions: The new standardized internal coding system for ambulatory care services has provided useful data analysis for program planning and evaluation, and has facilitated the billing processes at a rehabilitation hospital. The outpatient coding classification must be continuously reviewed to ensure the incorporation of new diagnoses.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47775

Type of Abstract: Review of the Literature

Title: **Models of Care for the Management of Acquired Brain Injury**

Primary Author: Matthew Meyer

Affiliation: Lawson Research Institute/ Parkwood Hospital

List of Authors: Matthew J Meyer, Robert W Teasell, JoAnne Aubut, Shawn Marshall, Nora Cullen, Mark Bailey, J A McClure

Abstract:

PURPOSE: To critically analyze international literature related to models of care in acquired brain injury (ABI). **RELEVANCE:** Results of recent research have begun to emerge regarding specific interventions for the rehabilitation of ABI patients. However, little work has been done to incorporate emerging evidence into the process of creating optimal models of care. In order to develop standards for best practice, an understanding of the strengths and weaknesses inherent in different models is critical. **METHODS:** An extensive review of databases including MEDLINE, EMBASE, CINAHL, and PsycINFO was performed. Background information was drawn from grey literature and peer reviewed articles. Studies were only considered for analysis if published in a recognized peer reviewed journal. Our aim was to compare rehabilitation systems, so only studies that compared at least two distinct management strategies for ABI care were included. **ANALYSIS:** Articles were evaluated for their methodological quality using the Physiotherapy Evidence Database Scale (PEDro) evaluation tool and the Downs and Black assessment tool. **RESULTS:** Four focus areas emerged from the literature: acute care (ER and ICU), inpatient rehabilitation, outpatient rehabilitation, and complete care pathways. Acute models of care were the most extensively studied with 15 studies found followed by outpatient with 5 and 3 each for inpatient rehabilitation and complete care pathways. Adherence to Brain Trauma Foundation guidelines for acute care may improve outcomes and decrease mortality rates. Multidisciplinary inpatient rehabilitation may be more effective than a single discipline approach. Higher intensity multidisciplinary inpatient rehabilitation may be more effective in improving short term recovery than similar less intensive therapy. Multidisciplinary outpatient rehabilitation may improve functional outcomes up to one year post discharge. **DISCUSSION:** There have been a limited number of studies examining models of care in ABI, which is surprising given its importance. Further research into the efficacy of different rehabilitation models as a component of complete care pathways is needed. **CONCLUSIONS:** There is insufficient evidence to draw definitive conclusions regarding the optimal model of ABI care. **KEY WORDS:** Models of care, acquired brain injury This work was supported by the Ontario Neurotrauma Foundation

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47777

Type of Abstract: Review of the Literature

Title: **Examining the Relationship between Dysphagia and Malnutrition Following Stroke: A Review of the Literature**

Primary Author: Norine Foley

Affiliation: Parkwood Hospital

List of Authors: Norine C Foley, Katherine L Salter, Robert W Teasell

Abstract:

RELEVANCE: While a high prevalence of both malnutrition and dysphagia has been reported, and they are known to co-exist frequently, the nature of the relationship remains poorly understood. **OBJECTIVE:** To examine the relationship between malnutrition and dysphagia following stroke, using evidence from previously published reports. **METHODS:** A systematic review using 4 databases (The Cumulative Index to Nursing and Allied Health Literature, MEDLINE, EMBASE and ISI Web of Science) was conducted to identify all published trials that had examined both the swallowing ability and nutritional status of subjects following stroke. **ANALYSIS:** Pooled analyses were conducted to establish whether the odds of being malnourished were increased given the presence of dysphagia. Odds ratio (OR) using a random effects model and 95% confidence intervals (CI) are reported. **RESULTS:** Eight studies were identified. Sample sizes ranged from 49 to 3,012. The presence of malnutrition and dysphagia ranged from 8.2% to 49% and 24.3% to 52.6%, respectively. In five trials conducted during the acute period, and two trials conducted during the rehabilitation phase, swallowing and nutritional assessments were conducted within several days of each other. In the final trial the presence of dysphagia had been established prior to rehabilitation admission, while nutritional status was assessed prospectively. With a single exception the association between swallowing ability and nutritional state was examined on only one occasion in each study. Data from 7 trials were available for pooled analysis. The odds of being malnourished were greater among subjects who were dysphagic compared with subjects with intact swallowing (OR: 2.425; 95% CI: 1.264 to 4.649, $p=0.008$). **DISCUSSION/CONCLUSION:** The odds of being malnourished were increased given the presence of dysphagia, although the nature of the relationship remains unclear. We may conclude that dysphagia did not lead to the development of malnutrition since assessments of nutrition and swallowing were conducted at the same time in the majority of trials.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47781

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **Transforming Transition - A lifespan model for managing childhood-onset disability across pediatric and adult sectors**

Primary Author: Joanne Maxwell

Affiliation: Toronto Rehabilitation Institute and Bloorview Kids Rehab

List of Authors: Joanne M Maxwell, Carie Gall, Bayley Mark, Helen Healy, Zee Joanne

Abstract:

PURPOSE: Over 90% of people born with a childhood onset disability (COD) live into adulthood. There are few specialized adult services. The transition from pediatric to adult care is often traumatic and unsuccessful. There is a need for a lifespan approach which recognizes the chronic nature of these disabilities. **RELEVANCE:** Access to rehab services throughout the lifespan is essential for individuals with COD to maximize health & function, facilitate participation, and prevent secondary conditions. Every year, hundreds of young adults are discharged from pediatric centres without adequate follow-up as adults. **ANALYSIS:** The Lifespan model was developed based on literature review, environmental scan and site visits to address this gap in service. Principles of the model include early, systematic preparation of children and youth for adult life, partnerships between the client, family, and service providers, and capacity-building at person, community and system levels. **RESULTS:** The LIFEspan service was initiated as a demonstration project for young adults with CP & ABI in 2006 and has expanded with funding from Toronto Central LHIN . Over 60 people have now been successfully transferred to the adult lifespan service. Initial feedback from clients and families has been very positive. Service utilization is variable and based on need. **DISCUSSION:** There is significant interest in program expansion plans from groups not currently eligible for services (individuals with other CODs and older adults with CP). **CONCLUSIONS:** the Lifespan model fills a significant gap for people with COD by providing linkages to the system as they become adults. The Lifespan model represents a shift in rehab practice from episodic to long-term management of conditions and may be applicable to other chronic conditions. Further evaluation of the impact of the model on health outcomes and utilization is ongoing .



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47797

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **Using Emotional Mapping for Patient Feedback to Facilitate Program Redesign**

Primary Author: Joan DeBruyn

Affiliation: Trillium Health Centre

List of Authors: Joan DeBruyn, Rodger Covey, Donna Byrne, Lynn Roberti, Sheryl Paul, Nadia Woloshyn

Abstract:

Purpose: An emotional mapping technique was used to better understand the current rehab patient experience. **Relevance:** This process can help to improve patient satisfaction and patient outcomes through a positive experience on rehab. **Subjects, Methods:** Four focus groups were conducted with 3-4 people admitted to inpatient rehab within the previous 14 days. Participants were asked about 10 aspects/steps of the admission phase to rehab. Emotional mapping identifies the emotions and experiences (including questions and anxieties) at each identified step of a process. Based on work done in Britain and the United States, this technique takes process mapping to a new level, and provides a format for patient or patient/staff focus groups to enable program improvements or redesign. **Analysis:** Several themes emerged from this qualitative data, although saturation was not reached. The feedback provided many suggestions for staff about how to improve the inpatient rehab experience. **Results/Findings:** Patients identified the transfer to rehab, and first meetings on the unit as being very positive experiences. Weekend routines and physical environment, including daylight and temperature were identified as less positive experiences. Patients wanted to know more about how they were progressing and if they were meeting the team's expectations. **Discussion/Observations:** Staff have addressed some concerns at staff council and unit meetings. One constraint is the ability to modify the physical environment. The design of a newly built unit is able to address several of the patients concerns as well. A tip sheet primarily related to communication patterns has been shared with staff. **Conclusions:** This approach helps to elicit specific feedback from patients that can directly improve patient satisfaction results. The results illustrate the importance of both staff routines, attitudes and behaviours as well as the positive and negative effects that physical environment can have on the patient experience.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47799

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **A patient-centred approach to measuring nursing and program outcomes in outpatient neurological rehabilitation**

Primary Author: Joan DeBruyn

Affiliation: Trillium Health Centre

List of Authors: Joan DeBruyn, Jean Adams

Abstract:

Purpose: To develop a nursing measure that reflected nursing practice in an outpatient stroke rehab setting and to implement outcome measures to demonstrate the effect of the interdisciplinary outpatient neurological rehabilitation. **Relevance:** In the current healthcare environment, clinical services are challenged to demonstrate and measure outcomes. Currently, there is a paucity of outcome measures designed for outpatient neurological settings. **Methods, Materials, Principles:** Based on clinical practice, a 7-item Nursing Self-Care Questionnaire was developed to measure patient's perceived achievement of 7 goals (knowledge, skills or attitude/confidence). In addition, the Stroke Aphasia Quality of Life was implemented at admission and discharge. An Outpatient Rehabilitation Satisfaction Survey was also implemented to obtain feedback about the program. **Analysis:** Mean scores for admission and discharge for a cohort of patients were calculated, in addition to item and overall change scores per patient. **Results:** Scores on the Nursing Stroke Self-Care Questionnaire improved from a mean score of 16.75/21 to 19.5/21. All four domains of quality of life improved overall, with the largest gains often observed in the domain of Energy level. Patients were very satisfied with the program, with over 80% reporting a mean score of 4 or 5 out of 5. **Discussion:** The self-care areas that are most challenging for patients are, "knowing the warning signs of stroke", "knowing what to do right away if I feel any of the signs and symptoms of stroke", and "knowing why I need to take my medication". Program strengths include overall quality, helpfulness/friendliness, communication and the staff. Areas that the team is working on improving include information on the first day, goal setting, scheduling, discharge information and meeting expectations. **Conclusions:** The implementation of patient-centred outcome measures is valuable in terms of demonstrating benefits and meaningful change for patients in outpatient rehabilitation. It also serves to monitor interventions and enable appropriate program improvements.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47801

Type of Abstract: Quantitative/Mixed Method Rehab Research at the Patient, Provider, Organizational, System or Policy Levels

Title: **Using Alpha FIM post-stroke to predict discharge destination and needs upon discharge**

Primary Author: Joan DeBruyn

Affiliation: Trillium Health Centre

List of Authors: Joan DeBruyn, Nicole Pageau, Gracia Asper, Lishan Taneza, Betty Ponte

Abstract:

Purpose: To evaluate the ability of the AlphaFIM administered on Day 5 post-stroke to predict the amount of care needed on discharge; and to evaluate the stability of the AlphaFIM from Day 5 to Day 15 post-stroke. **Relevance:** The AlphaFIM has been recommended for use in acute care to describe functional status. As well promoting an earlier admission to rehab, it is hoped that the tool can facilitate smooth transitions and guide planning and decision making. **Subjects, Methods:** Prospective, consecutive sample of patients admitted to the stroke unit. A sample of 49 patients was used for the initial pilot study using only the AlphaFIM. The second phase of the study involves ongoing data collection for all patients, using the AlphaFIM or AlphaFIM50. **Analysis:** Correlation between scores and discharge destination were analyzed, with further exploration of variables such as age, social support and bladder management. **Results:** The pilot has shown that the AlphaFIM tool was 96% accurate in predicting discharge to home with a cutoff score of 20, and 80% accurate in predicting admission to long term care with a score <15. Greater predictive value is achieved when social support is considered. Age was not correlated with Alpha FIM scores. Day 5 scores remained relatively stable at Day 15, with no change in predicted discharge destination, with the exception of some patients with scores between 15 and 20. **Discussion:** A 3-band model was developed based on the results of the pilot study. The addition of AlphaFIM50 helps to identify the amount of inpatient rehabilitation required. Day 5 is an appropriate time to assess patients and start planning for supports required at discharge. **Conclusion:** The AlphaFIM is a valuable tool with high predictive value in assisting referrals to rehab and early planning for supports required upon discharge.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47807

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **Inter-Professional Team Approach in Community Stroke Service Delivery**

Primary Author: Heather Brien

Affiliation: Toronto Central Community Care Access Centre

List of Authors: Heather D Brien, Wendy Corber , Helen Chan

Abstract:

RESEARCH HYPOTHESIS: To describe the implementation (including barriers and facilitators) of an inter-professional team approach to community-based stroke rehabilitation. **RELEVANCE:** There is limited research describing implementation of an inter-professional team approach to stroke rehabilitation in home care. **HYPOTHESIS:** An inter-professional team approach to stroke rehabilitation in home care has a positive impact on clinical practice. **SUBJECTS:** 101 subjects were randomized to receive usual home care (control) or the inter-professional team approach (experimental). Study participants were Toronto Central Community Care Access Centre clients, lived in the community, < 18 months post-stroke, and understood English. **METHODS:**All team members were trained in use of validated assessment tools to support client care and team communication. Data was collected at regular intervals over the 12 month intervention period and shared at monthly team meetings. **ANALYSIS:** Validated assessment tools applicable to stroke survivors living in the community were identified. Assessment findings were used by the teams to make meaningful client care decisions. **RESULTS/FINDINGS:** An inter-professional team approach positively impacted practice by promoting adoption of evidence-based standards, building networks and alliances, expanding skills in health promotion and inter-professional collaboration, optimizing roles and responsibilities, and enhancing continuity of care. The essential features of this approach including case management, regular home visits, standardized evidence-based protocols, weekly case conferencing, and a single interdisciplinary plan are highlighted. Lessons learned will foster the identification of strategies to enhance community re-engagement **DISCUSSION/FINDINGS:** The interdisciplinary team members were committed to attendance at team meetings and the use of validated assessment tools. This developed a common language, facilitated comprehensive team discussions and care plans to meet evolving client needs **CONCLUSIONS:** An inter-professional team approach is an effective method for providing high quality care to stroke survivors living in the community. The use of validated assessment tools is critical to evaluate progress in the client and caregiver and guide team based decision-making.



Monday, March 9, 2009
8:30 a.m. - 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47809

Type of Abstract: Qualitative/Mixed Methods Rehab Research at the Patient, Provider, Organizational, System or Policy Levels

Title: **RETURNING HOME: FAMILY CAREGIVERS' EXPERIENCES WITH STROKE SURVIVORS' WEEKEND VISITS**

Primary Author: Amanda Marsella

Affiliation: University of Toronto

List of Authors: Amanda M Marsella, Jill I Cameron, Judith Friedland, Denyse Richardson

Abstract:

BACKGROUND: With up to 80% of stroke survivors returning home to continue their recovery in the care of a family caregiver, one of the most important steps in stroke rehabilitation becomes community reintegration. The transition from hospital to home is described as one of the most stressful and burdensome transitions in the care continuum. Weekend home visits have been developed to ease stroke survivors' transition from inpatient rehabilitation, to the home environment. Such visits afford stroke survivors and their family caregivers the opportunity to practice living in the home environment prior to being fully discharged. Weekend home visits have been recommended since the early 1970s, yet no formal research has been conducted on their use. As a result, weekend home visits lack evidence to support their practice. **OBJECTIVE:** To examine family caregivers' perceptions of, and experiences with, weekend home visits during inpatient rehabilitation, and to determine the educational and support needs of family caregivers in order to optimize the potential benefits weekend home visits offer. **METHODS:** We will conduct a qualitative study using a phenomenological perspective. Fifteen family caregivers of stroke survivors will participate in two interviews: 1) a few days prior to the first scheduled home visit; 2) within two weeks following discharge home. **RESULTS:** Preliminary results reveal caregivers experience mixed reactions to weekend visits, ranging from positive to extremely negative views of the process. **SIGNIFICANCE:** Results from this study will directly inform the weekend home visit program offered at Toronto Rehabilitation Institute, as well as other organizations offering weekend visits as a method of discharge.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47823
Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations
Title: **Use of the Nintendo Wii in Pediatric Rehabilitation**
Primary Author: Barbara Lopetinsky
Affiliation: Glenrose Rehabilitation Hospital
List of Authors: Barbara Lopetinsky

Abstract:

PURPOSE (OR RESEARCH HYPOTHESIS): The Nintendo Wii is used as a novel tool to enhance rehabilitation in children. **RELEVANCE:** Using the Nintendo Wii during rehabilitation increases children's motivation and allows for longer treatment time. It provides an opportunity for success since many children with disabilities are very good at computer games – it combines physical challenge within a comfortable framework that the children are familiar with. The WiiFit provides a tool for therapy and objectively measures improvements in balance and core stability. **[ALTERNATIVE FOR NON-RESEARCH PROJECTS ONLY] METHODS, MATERIALS AND PRINCIPLES:** The Nintendo Wii is used in children with cerebral palsy, spinal cord injuries, traumatic brain injuries, hemiplegia, juvenile arthritis, scoliosis and development co-ordination disorder at our facility. It is used for standing and sitting balance training, strengthening exercises (lower extremity, upper extremity and core strengthening), prolonged stretching, endurance training, upper extremity ROM and for motor planning work and increasing body awareness. Several different therapeutic activities are performed using both the Wii and Wii Fit in a variety of positions incorporating typical therapeutic devices such as therapy balls and wobble boards as well. **ANALYSIS:** The Nintendo Wii has been successfully integrated into our pediatric rehabilitation program with many therapists using it on a regular basis for a variety of patients. **RESULTS/FINDINGS:** Although further research is needed, increased patient motivation and endurance has been noted. The Wii is very user friendly – it is easy for therapists to set up and operate. It increases the variety of treatment options available. There is a natural carry-over to home programs – many of our families have Wii's at home. **DISCUSSION/FINDINGS:** The Nintendo Wii Fit provides both knowledge of performance and knowledge of results in its feedback enhancing motor learning. **CONCLUSIONS:** The Nintendo Wii provides another tool for rehabilitation and is recommended for pediatric rehabilitation.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47849

Type of Abstract: Quantitative/Mixed Method Rehab Research at the Patient, Provider, Organizational, System or Policy Levels

Title: **“Prescription for Education”:** A pilot study of the effectiveness of an education program for adults with inflammatory arthritis

Primary Author: Carol Kennedy

Affiliation: St. Michael's Hospital

List of Authors: Carol A Kennedy, Dorcas E Beaton, Rachel Shupak, Kelly Warmington

Abstract:

Purpose: To examine the effect of a single day, interdisciplinary, inflammatory arthritis education program (RxEd) on self-efficacy and other secondary outcomes. **Relevance:** Patient education is core to any arthritis program. **Subjects:** Persons with inflammatory arthritis recruited from tertiary level arthritis clinics. **Methods:** Non-randomized, wait-listed control trial of RxEd program (I). Data were collected at beginning of study (T1), immediately following I (T2) and at 6 months (T3). Measures included demographics, disorder-related, self-efficacy (SE), arthritis knowledge [ACRUE RA knowledge (PK), RxEd Content knowledge (CK)] and coping efficacy (CE). **Analysis:** Univariate comparisons by group (I vs C), Relative Standardized Response Means [RSRM (T3-T1) = $\text{mean } \Delta \text{ I-C/PSD (mean } \Delta \text{ I-C)}$], direct between-group statistical comparison (t-test) and mean scores plotted over time. **Results:** 42 persons participated in the study (I n=23; C n=19). No significant baseline differences found for: demographics, disorder-related, SE, PK, CK and CE measures. For primary outcome (SE): RSRM = 0.6 and t-test of borderline significance ($p = 0.06$). I group showed immediate effect (improved SE) after the intervention and sustained the effect at 6 months while C group had no effect. For secondary outcomes: PK RSRM = 0.6, t-test $p = 0.07$; CK RSRM = 0.5, t-test $p = 0.12$; CE RSRM = 0.7, t-test $p < 0.05$. I group showed an immediate effect in uptake of arthritis knowledge (PK and CK) after the intervention that diminished slightly over the 6 months while C group had no effect. I group showed an increase in CE that was sustained at 6 months while C group had no effect. **Discussion:** Despite small sample sizes (underpowered), we found RSRM ranging from 0.5 to 0.7 and significant/borderline significant between-group comparisons. **Conclusions:** This pilot study provides evidence that the RxEd program is feasible and likely to improve self-efficacy, knowledge and coping efficacy.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47901

Type of Abstract: Review of the Literature

Title: **Spinal Cord Injury Rehabilitation: An Evidence Based Review (SCIRE) version 2**

Primary Author: Jo-Anne Aubut

Affiliation: Parkwood Hospital (SJHC)

List of Authors: Jo-Anne Aubut, Robert Teasell, Janice Eng, Dalton Wolfe, Andrea Townson, William Miller, Brianne Foulon, Kristin Konnyu, Jane Hsieh, Brodie Sakakibara, SCIRE TEAM

Abstract:

Purpose: To conduct a systematic review of the published research examining the strengths and weaknesses of various interventions used within the field of spinal cord injury (SCI) rehabilitation. **Methods and Analysis:** MEDLINE®/PUBMED, CINAHL®, EMBASE®, and PsycINFO® were searched for articles addressing all interventions used within the SCI population. Methodological quality was assessed using either the Physiotherapy Evidence Database Scale (PEDro) or the Downs and Black assessment tool. Included were randomized controlled trials (RCTs) and all non-RCTS. Data extracted included demographic information, inclusion, exclusion criteria, injury details, and intervention or devices used. A variety of treatments and interventions were evaluated and divided into topic areas. A level of evidence using a modified Sackett scale was assigned to each intervention and bottom line summary statements were created to facilitate knowledge mobilization by clinicians. **Results and Discussion:** A total of 1065 studies have now been assessed with the update to SCIRE. Of these, 193 were RCTs, 115 contained level 1 evidence, 199 level 2, 21 level 3, 610 level 4, and 64 level 5. Three new chapters were included: Aging, Wheelchairs and Seating Equipment, and Physical Activity. Chapters with the greatest number of RCTs included: Bladder (n=26), Pain (n=18), Sexual Health (n=17), Spasticity (n=15), Bone Health (n=14), and Upper Limb (n=14). **Conclusions:** Version 2 of the SCIRE evidence-based review has recently been completed and is available online (www.icord.org/scire). In general there are an increasing number of RCTs and Level 1 evidence as research grows within any intervention discussed; however, only 18% of studies chosen for review were RCTs and 11% had level 1 evidence. It is our vision that this resource be continually updated to serve as a foundation for application and initiatives focused on knowledge mobilization, best practice adoption and research priority setting. This work was supported by the Ontario Neurotrauma Foundation and ICORD/Rick Hansen Man in Motion Foundation.



Monday, March 9, 2009
8:30 a.m. - 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47905

Type of Abstract: Review of the Literature

Title: **A Review of Treatment of Pain Following Spinal Cord Injury**

Primary Author: Jo-Anne Aubut

Affiliation: Parkwood Hospital (SJHC)

List of Authors: Jo-Anne Aubut, Robert Teasell, Christine Short, Dalton Wolfe, Jane Hsieh, Andrea Townson, Brianne Foulon

Abstract:

Purpose: To conduct a systematic review of published research evidence for the treatment of pain post spinal cord injury (SCI). **Methods and Analysis:** MEDLINE®/PUBMED, CINAHL®, EMBASE®, and PsycINFO® were searched for articles addressing the treatment of pain post-SCI. Studies included in the present review were randomized controlled trials (RCTs), non-RCTS, cohort, case-control, case series, pre-post and post interventional studies and if necessary case studies. The PEDro and Downs and Black assessment tools were used to evaluate all chosen articles for methodological quality. A level of evidence using a modified Sackett scale was assigned to each intervention. **Results and Discussion:** Fifty percent, or more, of those who sustain a SCI develop chronic pain. Overall, pharmacological interventions were found to be more effective than non-pharmacological treatments. There was strong evidence supporting the use of certain anticonvulsants (gabapentin and pregabalin), two local anaesthetics (lidocaine and intravenous ketamine) and intrathecal baclofen; alternatively, opioids, cannabinoids and tricyclic antidepressants appear to have only limited evidence of benefit or no benefit. Clonidine and morphine given together have a synergistic pain-relieving effect. There was one non-pharmacological intervention, transcranial electrical stimulation that was also shown to be successful in reducing pain post-injury. Other treatments, such as shoulder exercise, acupuncture, visual strength of the imagery, stable magnetic field therapy, and spinal cord stimulation may reduce pain, but the evidence is limited. **Conclusion:** Although more research is needed there is growing evidence upon which treatment of pain in the SCI patient can be formulated based on best research to date. This work was supported by the Ontario Neurotrauma Foundation and ICORD/Rick Hansen Man in Motion Foundation.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47943

Type of Abstract: Review of the Literature

Title: **A review of the outcome measures used to evaluate the tetraplegic hand and upper limb resulting from a SCI.**

Primary Author: Sandra Connolly

Affiliation: Parkwood Hospital

List of Authors: Sandra Connolly, Swati Mehta, Robert Teasell, Jo-Anne Aubut, William Miller, SCIRE Team

Abstract:

Purpose: To review the outcome measures used to assess the function of the tetraplegic hand and upper limb within the spinal cord injury (SCI) population using the International Classification of Functioning, Disability and Health (ICF) conceptual framework. **Relevance:** There are very few measures that accurately assess the tetraplegic hand and upper limb. Accurate measurement is required for analysis of treatment effect, outcome measurement and the development of future treatment options. **Methods and Analysis:** The following databases were searched for articles relating to outcome measures used in the SCI population: MEDLINE/PUBMED, CINAHL, EMBASE, Web of Science, Health and Psychosocial Instruments (HAPI), SPORTDiscus and PsycINFO. The selected articles examined the various outcome measures or tools used to assess hand and upper limb function with individuals with a cervical level SCI following treatment interventions. **Results and Discussion:** Measurement of the tetraplegic hand and upper limb requires careful selection of an assessment tool in order to obtain meaningful data for evaluation. Measurement tools are used for the purposes of screening, diagnosis, or evaluation. Within each measure there are six key issues of measurement that need to be addressed. These include comprehensive physiological evaluation, hand ability versus activities of daily living (ADL) performance, contextual factors (environmental and personal factors), timed testing, and timing of the measurement. The ICF framework was used for the identification of measures considered for use within the various ICF components. **Conclusions:** There is no one single measure that assesses every domain of hand and upper limb function of the tetraplegic arm. The ICF is a useful framework in which to evaluate the tetraplegic hand and upper limb within each ICF component. The ICF has been recommended for use in outcome research. This work was supported by the Ontario Neurotrauma Foundation and ICORD/Rick Hansen Man in Motion Foundation.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 47945

Type of Abstract: Review of the Literature

Title: **Spinal Cord Injury Rehabilitation Evidence (SCIRE): What does the evidence say about wheelchairs and seating equipment for people with Spinal Cord Injury**

Primary Author: Sandra Connolly

Affiliation: Parkwood Hospital

List of Authors: Sandra Connolly, Swati Mehta, Karen Trenholm, Laura Titus, Susan Moir, Jo-Anne Aubut, Brianne Foulon

Abstract:

Purpose: To systematically review the published literature discussing wheelchairs and seating equipment and the use of pressure mapping for those with a spinal cord injury (SCI). **Relevance:** For individuals with SCI, the use of wheelchairs and seating equipment can be described as one of the most important therapeutic interventions provided. Careful assessment and prescription of wheelchairs and seating equipment is critical to optimizing independence. **Methods:** The following databases were searched for articles relating to wheelchairs and seating equipment and the use of pressure mapping used within the SCI population: MEDLINE/PUBMED, CINAHL, EMBASE, and PsycINFO. In this field of study much of the literature reviewed was descriptive studies. All study designs were included in the review that related to wheelchair and seating equipment. **Analysis:** Data extracted included demographic information, inclusion and exclusion criteria, the description of the intervention or device used, and the study results. A wide range of studies were examined and synthesized. Methodological quality was assessed using either the Physiotherapy Evidence Database Scale (PEDro) or the Downs and Black assessment tool. A level of evidence using a modified Sackett scale was assigned to each intervention. **Results and Discussion:** The systematic review addressed areas of wheelchair, seating equipment and pressure mapping with the SCI population. Wheelchairs with adjustable axle position and the use of power-activated power-assist wheelchairs improved wheelchair propulsion and reduced the risk of upper extremity injury. Level of SCI and the client's posture has the greatest impact for wheelchair and seating equipment selection. **Conclusions:** The prescription of wheelchair and seating equipment for the SCI population is complex and multifaceted. Numerous authors support the need for clinical expertise and objective evaluation of the client's multiple functional and lifestyle needs. Studies reviewed were more qualitative in nature, with much of the research focusing on seating interventions and wheelchair design.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48049

Type of Abstract: Review of the Literature

Title: **Botulinum Toxin for Post-Stroke Treatment of Upper Limb Spasticity: A Systematic Review**

Primary Author: Shashank Garg

Affiliation: Parkwood Hospital, University of Western Ontario

List of Authors: Shashank Garg, Robert Teasell, Norine Foley, Manuel M. Fernandez

Abstract:

Purpose: Botulinum toxin is a powerful neurotoxin that temporarily weakens muscles by inhibiting acetylcholine release at the neuromuscular junction. Botulinum toxin injections to hypertonic muscles can therefore allow patients to partially regain range of motion or experience pain relief, thereby improving function and significantly improving quality of life. This systematic review addressed the question: Does Botulinum toxin improve upper limb function in post-stroke spasticity? **Methods:** Randomized controlled trials (RCTs) studying use of Botulinum toxin for upper limb spasticity in stroke patients were eligible. A number of electronic databases as well as references in key articles were searched. **Results:** Ten RCTs were identified (n=524). All randomized less than 70 patients per trial arm. One studied Botulinum toxin with Functional Electrical Stimulation (FES), and eight were placebo controlled. Three RCTs studying the effects of Botulinum toxin on Activities of Daily Living (ADLs) were identified, and two of these studies detected significant improvement in performance on ADLs with Botulinum toxin use. Overall, a number of different outcome measures were used, with Modified Ashworth Score (MAS) being the most common. MAS decreased significantly with Botulinum toxin use. Range of motion (ROM) was also shown to improve with Botulinum toxin use. **Conclusions:** Limited data is available regarding Botulinum toxin use to improve upper limb function in stroke patients. Botulinum toxin appears to be effective in reducing spasticity, as measured by MAS. Some studies detected an improvement in upper limb function, depending on the type of outcome measures used. Studies using global rating scales of disability showed mixed results. Performance on specific ADLs appeared to be sensitive as an outcome measure to detect the effect of Botulinum toxin on upper limb function. For future research purposes, it may be useful to identify and agree upon specific outcome measures pertinent to the post-stroke spasticity setting.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48051

Type of Abstract: Review of the Literature

Title: **Botulinum Toxin for Post-Stroke Treatment of Lower Limb Spasticity: A Systematic Review**

Primary Author: Shashank Garg

Affiliation: Parkwood Hospital, University of Western Ontario

List of Authors: Shashank Garg, Robert Teasell, Norine Foley, Harpreet Sangha

Abstract:

Purpose: Botulinum toxin is a powerful neurotoxin that temporarily weakens muscles by inhibiting acetylcholine release at the neuromuscular junction. Botulinum toxin injections to hypertonic muscles can therefore allow patients to partially regain range of motion or experience pain relief, thereby improving function and significantly improving quality of life. This systematic review addressed the question: Does Botulinum toxin improve gait and lower limb function in post-stroke spasticity? **Methods:** Randomized controlled trials (RCTs) studying use of Botulinum toxin for lower limb spasticity in stroke patients were eligible. A number of electronic databases as well as references in key articles were searched. **Results:** Nine RCTs were identified (n=410). All randomized less than 60 patients per trial arm. Two studied Botulinum toxin with Functional Electrical Stimulation (FES), and two studied dose-ranging effects. Two placebo-controlled studies were identified. Lower limb function was assessed using a variety of diverse outcome measures, with gait velocity being the most common. Some studies reported significant increase in gait velocity with treatment, although both placebo-controlled trials were unable to detect a significant improvement when treatment and placebo arms were compared. Overall, Modified Ashworth Scale (MAS) was the most commonly used outcome measure, and it decreased significantly with Botulinum toxin use in every study. Improvement in lower limb function was not as clear. **Conclusions:** Limited data is available regarding Botulinum toxin use to improve gait and lower limb function in stroke patients. Botulinum toxin appears to be effective in reducing spasticity, as measured by MAS. However, Botulinum toxin was not clearly shown to improve gait or function. Further research in this area is a priority with standardized and validated tools to assess gait and lower limb function.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48063

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **Filling in the Gaps: A Regional Stroke Team Approach**

Primary Author: Riva Sorin-Peters

Affiliation: Sunnybrook Centre for Independent Living, Rm. UG21 Assistive Technology Clinic

List of Authors: Riva Sorin-Peters, Henza Miller, Jessica Comay

Abstract:

Purpose: The purpose of this presentation is to describe the innovative model of care employed by the interprofessional Regional Stroke Team – North and East GTA to promote stroke recovery and community re-integration for stroke out-patients. **Relevance:** This model of service delivery is relevant to the practice of rehabilitation because it promotes a flexible, interprofessional and holistic approach to stroke care. It suggests that gaps continue to exist in our current continuum of services to stroke survivors and that these gaps can be filled by a regional stroke team, thereby improving function and promoting participation in life activities for stroke survivors. **Methods/Materials/Principles:** The Regional Stroke Team – NEGTA accepts referrals for stroke out-patients from a variety of physician sources. Using an interprofessional assessment battery which is based on best practice guidelines, the team develops an individualized and holistic care plan for each patient to maximize the person's potential to recover and integrate into community life. The range of interventions provided will be described and include: education/counseling, referral to inpatient or outpatient rehabilitation facilities, time-limited direct treatment from the RST PT/OT/SLP/dietician, AAC assessment, and assistance in establishing linkages with community programs. The expediting of referrals to specialty programs will also be outlined, including a description of team's direct link to the following: seating clinic, spasticity clinic, gait and balance clinic, Lifestyle Management Program and Learner-centred Training for Spouses of Adults with Aphasia program. **Analysis:** Patient information was analyzed over a two-year period. Quantitative data included demographic patient information and outcomes following RST involvement. Data were also reviewed informally to identify patient trends and needs. **Results:** Results of analyses will be presented, including: 1) Description of the two major categories of patients who were identified as "falling between the cracks" in the stroke system. Ways in which the RST fills the gap for these types of patients will be presented with case study examples. 2) A brief description of the benefits of expedited referrals to specialty clinics will be outlined. **Discussion:** This Regional Stroke Team model of care is innovative in that the interprofessional team uses a flexible and person-centred approach to identify and manage gaps in care for the stroke patient living in the community. Preliminary data suggest that this is an effective and economical model of care. **Conclusions:** The implications of the above results will be discussed. Ways to minimize the likelihood of patients "falling between the cracks" will be discussed as well as ways to improve communication among acute care, rehabilitation, and community stroke programs.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48089

Type of Abstract: Quantitative/Mixed Method Rehab Research at the Patient, Provider, Organizational, System or Policy Levels

Title: **The preliminary effect of a four week sit-to-stand practice class on balance, strength and functional mobility in a stroke rehabilitation inpatient population: a pilot study**

Primary Author: Stephanie Coke

Affiliation: Providence Healthcare

List of Authors: Shawn G Brady, Stephanie Coke, Erika Hasler, Katherine Berg, Amy Karpowicz, Zophia Nikipierowicz, Courtney Steele

Abstract:

PURPOSE: The purpose of this study was to assess the preliminary effects of a repetitive sit-to-stand practice class as an adjunct to conventional therapy on balance, strength and functional mobility among inpatients with sub acute or chronic stroke. **RELEVANCE:** Few studies have assessed the impact of additional sit-to-stand practice in an inpatient stroke rehabilitation population. **HYPOTHESIS:** Sit-to-stand practice class would be an effective adjunct to conventional therapy in a stroke inpatient rehabilitation setting compared to conventional therapy alone. **SUBJECTS:** A convenience sample of twenty-three stroke patients were consecutively enrolled into Phase I (n=12; conventional physiotherapy alone) or Phase II (n=11; conventional physiotherapy with adjunct sit-to-stand class) treatment approaches. **METHODS:** Using a repeated measure experimental design, measures of balance, strength & functional mobility were assessed upon study eligibility and following four weeks of treatment using the Berg Balance Scale, Five Times Sit-to-Stand and Timed Up and Go outcome measures, respectively. **ANALYSES:** Statistical analyses included descriptive, paired and unpaired t-tests, and non-parametric Mann-Whitney and Wilcoxon matched pairs signed rank tests. Feasibility variables were analyzed using descriptive statistics and clinical judgment. Statistical significance was set at $\alpha=0.05$. **RESULTS:** Both treatment approach groups were similar at baseline and showed within group improvements in balance, strength and functional mobility at four weeks. However, no significant improvements were noted between Phase I and II treatment approaches. **DISCUSSION:** Participants and staff felt the class was a time-efficient and effective adjunct to traditional therapy. Patients reported enjoying the class due to the social atmosphere, positive attitude of staff and the addition of variety to daily therapy. **CONCLUSIONS:** Functional task-oriented training has the potential to enhance conventional therapy. A larger study with adequate sample size and training time is required to determine if such a class is both feasible and beneficial at this facility.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48105
Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations
Title: **Managing your COPD: an education package for in-patients**
Primary Author: Christine Bidmead
Affiliation: QUEENSWAY CARLETON HOSPITAL
List of Authors: CHRISTINE BIDMEAD

Abstract:

Relevance: Re-admission rates for COPD patients are a concern for acute hospitals, and the lack of primary and community support for Chronic Disease Management means that for many patients the Emergency Department is the only resource they can turn to. Methods : In an effort to support patients through their discharge home, the Inpatient Rehabilitation team developed a series of education modules for patients to experience while working on reconditioning on the short term rehab unit. Materials and Principles: These modules are stand alone, the program can be started at any stage, and are delivered in groups or 1:1 depending on patient need or patient volumes on the unit. The team reviewed the literature and the work done by the Lung Association to ensure that there was a continuity of language and approach between their message and the other information that patients might receive. Six modules were developed and presented by Physiotherapy (Managing breathlessness) OT (Energy Conservation) Nursing (Smoking Cessation) RT and Pharmacy (Managing your Medications and Oxygen) Speech and Dietitian (Swallowing and Nutrition) Social Work (relaxation and sexuality, all of which were based on best practice and were peer reviewed with the team, the respirologist and physiatrist. Results & Findings: The program began in the summer of 2008 with excellent patient feedback. Patient satisfaction survey results and readmission rates for those patients have yet to be analysed. Findings to date: Subjective results from patients show that they have benefited from the extra knowledge and management strategies, and feel more able to cope on discharge from hospital Conclusion: This program will be evaluated in Jan 2009 and will form the basis of the education part of the Chronic Disease management program for the hospital.



Monday, March 9, 2009
8:30 a.m. - 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48177

Type of Abstract: Review of the Literature

Title: **Prevention of Deep Venous Thromboembolism in Stroke and Acquired Brain Injury Patients: A Systematic Review.**

Primary Author: Jo-Anne Aubut

Affiliation: Parkwood Hospital (SJHC)

List of Authors: Jo-Anne Aubut, Shawn Marshall, Nora Cullen, Mark Bayley, Norine Foley, Katherine Salter, Matthew Meyers, ERABI Team, EBRSR Team

Abstract:

Purpose: A systematic review of the rehabilitation literature of the treatment of venous thromboembolism (VT) in individuals who sustained a stroke or acquired brain injury (ABI) was conducted. **Methods:** Several databases were searched for articles related to interventions used to assist individuals with stroke or ABI. Among those were MEDLINE/PUBMED, CINAHL, EMBASE, and PsycINFO. Both reviews included randomized controlled trials (RCTs); however the ABI review also included non-RCTs discussing interventions for VT that might be used post injury. All studies involved pharmaceutical interventions. **Analysis:** In both studies articles were scored for quality using the Physiotherapy Evidence Database Scale (PEDro) evaluation tool. The Downs and Black assessment tool was also used to evaluate study quality of the non-RCTs selected for the ABI study. **Results:** There was strong evidence that anticoagulation significantly reduces the incidence of deep vein thrombosis (DVT) when compared to placebo post stroke. In ABI patients, the focus of interventions has been on whether anticoagulation adds to intracranial bleeding and here there was strong evidence that prophylactic unfractionated heparin (UFH) given early does not lead to increased or recurrent intracranial bleeding. In both stroke and ABI patients there was strong evidence that low molecular weight heparin (LMWH) was more effective than low dose UFH in preventing DVTs and was as effective as UFH for the prevention of pulmonary embolism. In ABI patients, there was strong evidence that LMWH combined with compression stockings was more effective than compression stockings alone for the prevention of VT after elective neurosurgery and did not cause excessive bleeding. **Conclusions:** Even though the literature was quite extensive on pharmaceutical interventions for VT in general, there was more evidence within the stroke literature when compared with the ABI literature. Although stroke research evidence can be extrapolated to ABI patients, absence of available research within the ABI scientific literature indicates that more focused research is needed. **Key Words:** venous thrombosis, stroke, acquired brain injury This work was supported by the Ontario Neurotrauma Foundation and the Canadian Stroke Network

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48189

Type of Abstract: Review of the Literature

Title: **Cognitive Behavioural Therapy in Spinal Cord Injury: A Systematic Review**

Primary Author: Swati Mehta

Affiliation: Parkwood Hospital

List of Authors: Swati Mehta, Steve Orenczuk, Robert Teasell, Brianne Foulon, Jo-Anne Aubut, Kathryn Boshen, SCIRE Research Team

Abstract:

Purpose: To examine the use of cognitive behavioural therapy (CBT) in the spinal cord injured (SCI) population. **Relevance:** Understanding the effectiveness of applying CBT to improve functioning and quality of life in individuals with SCI. **Methods and Analysis:** A systematic review was conducted using multiple databases (MEDLINE, PUBMED, CINAHL, EMBASE and PsycINFO). Four authors reviewed articles to determine inclusion eligibility. Only articles meeting the following criteria were included: 1) human subjects; 2) SCI population greater than 50%; 3) at least three subjects with SCI. Selected articles were grouped according to levels of evidence assigned using a modified Sackett scale. Randomized controlled trials (RCTs) were evaluated for methodological quality using both the Physiotherapy Evidence Database tool and the Downs and Black tool, while non-RCTs were assessed using only the Downs and Black tool. **Results and Discussion:** 9 studies met the inclusion criteria. Of these, 2 provided evidence designated as level 2, 1 was considered level 3 and 6 were level 4. Cognitive behavioural therapy was most commonly used in the treatment of depression and anxiety of SCI patients. Short term therapy was effective in the treatment of depression; however, a significant improvement in anxiety was only seen when therapy was provided regularly for over 1 year. Most studies looked at the positive effect of the components of CBT on improving adjustment, self-perception, community involvement and life satisfaction after SCI. One level 4 study looked at its use in pain reduction; however, no significant impact was seen. **Conclusions:** There is strong evidence that the long-term use of CBT improves SCI patients' psycho-social well being. However, cognitive behavioural therapy can involve many different components and it is important to determine which of these may be most effective in treating the emotional and physical consequences of SCI. Further, its use in pain management requires more research involving better designed interventions. This work was supported by the Ontario Neurotrauma Foundation and ICORD/Rick Hansen Man in Motion Foundation.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48241

Type of Abstract: Review of the Literature

Title: **Prevention and Treatment of Seizure in Stroke and Acquired Brain Injury Patients: A Systematic Review**

Primary Author: Matthew Meyer

Affiliation: Lawson Research Institute/ Parkwood Hospital

List of Authors: Matthew J Meyer, JoAnne Aubut, J A McClure, Shawn Marshall, Nora Cullen, Mark Bailey, Robert W Teasell, Norine Foley, Katherine Salter

Abstract:

Purpose: To review the rehabilitation literature for seizure management in patients who had sustained stroke or acquired brain injury (ABI). **Relevance:** Seizures are a complication shared by both stroke and ABI patients. An understanding of the evidence behind seizure treatments for both conditions is valuable in informing management practices. **Methods:** Literature searches in databases including MEDLINE/PUBMED, CINAHL, EMBASE, and PsycINFO were performed for studies on seizure management in stroke and ABI. Evidence was evaluated for stroke and ABI separately and then comparisons were drawn. **Analysis:** Articles were scored for their methodological quality using the Physiotherapy Evidence Database Scale (PEDro) for randomized controlled studies (RCT) and the Downs and Black assessment tool for non-RCTs. These scores were then used to develop levels of evidence. **Results:** Seizure management has been poorly studied in stroke when compared to ABI. Thirteen RCTs were located in ABI compared to only one in stroke. This makes drawing conclusions difficult in stroke. The single RCT reported that lamotrigine was superior to carbamazepine for seizure management post stroke but further research is necessary. In ABI, there was strong evidence that anticonvulsants provided immediately post-ABI reduce the occurrence of seizures within the first week but do not reduce long-term mortality, morbidity, or late seizures. There was also strong evidence that anticonvulsants have negative consequences on motor tasks. There was limited evidence that early glucocorticoid exposure may increase seizures, methylphenidate may not increase the risk of seizures, and intramuscular midazolam may be effective for acute seizure cessation. In children, there was strong evidence that phenytoin does not reduce early or late seizures post-ABI. Finally, there was limited evidence that surgical excision can reduce seizures if the focus of the seizures can be localized. **Conclusions:** Seizure management has been more thoroughly researched in the ABI literature when compared to the stroke literature. Therefore, the ABI literature on seizure management may be a valuable guide for informing clinical practice or for designing future research in stroke. **Key Words:** Seizure, stroke, acquired brain injury This work was supported by the Ontario Neurotrauma Foundation and the Canadian Stroke Network



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48263

Type of Abstract: Review of the Literature

Title: **A Systematic Review of Cognitive Therapy in Stroke and Acquired Brain Injury Rehabilitation**

Primary Author: Andrew McClure

Affiliation: Lawson Health Research Institute

List of Authors: Andrew J McClure, Robert Teasell, Matthew J Meyer, Shawn Marshall, Nora Cullen, Mark Bayley, JoAnne Aubut, Norine Foley, Katherine Salter

Abstract:

Purpose: To conduct a systematic review of cognitive therapy in stroke and acquired brain injury (ABI) rehabilitation. **Relevance:** Debate continues regarding the benefits of cognitive rehabilitation in stroke and acquired brain injury patients. A systematic review of the literature will not only describe the current state of the research but will also stimulate comparisons of the research for both of these potentially disabling conditions. **Methods:** Several Databases were searched for articles related to cognitive interventions for stroke or ABI patients. The primary databases searched were MEDLINE/PUBMED, CINAHL, EMBASE, and PsycINFO. Both reviews included RCTs; however, the ABI review also included non-RCT investigations. **Analysis:** The Physiotherapy Evidence Database Scale (PEDro) was used to evaluate methodological quality for all RCTs reviewed while the Downs and Black assessment tool was used to evaluate non-RCTs included in the ABI review. **Results:** Interventions fell under the categories of Remediation of Attentional Deficits, Memory Deficits, Executive Functioning and Problem Solving, Alternative Therapies, and General Cognitive Rehabilitation. For stroke patients, there was strong evidence that compensatory strategies were effective in improving memory and moderate evidence that daily attention training and visual attention retraining can improve attentional performance. Conversely, for ABI patients, there was limited evidence that internal memory strategies and memory retraining programs improved memory performance and limited evidence that dual task training was effective for improving processing speed. There was also limited evidence that goal management training was effective in helping ABI patients achieve post-injury goals. Finally, there was conflicting evidence regarding the use of general rehabilitation therapy post-ABI. **Conclusions:** In general, there appears to be more research investigating cognitive therapy in ABI as compared to stroke. While some results can be extrapolated between stroke and ABI, notable gaps in both stroke and ABI research point to areas that are in need of further study.



Monday, March 9, 2009
8:30 a.m. - 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48271

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **The Stroke Rehabilitation Evidence-Based Review (SREBR) 11th edition**

Primary Author: Robert Teasell

Affiliation: Lawson Health Research Institute SJHC

List of Authors: Robert Teasell, James R Graham, Norine Foley, Katherine Salter, Mark Speechley, Jeff Jutai

Abstract:

Relevance: There has been an unprecedented acceleration in the number of RCTs in stroke rehabilitation over the last decade. The Stroke Rehabilitation Evidence-Based Review (SREBR) is a systematic review of therapeutic interventions utilizing multiple data-bases. The SREBR has become a core evidence-based infrastructure for a number of provincial and national initiatives while retaining its focus on informing front-line workers. **Purpose:** The SREBR was designed to: 1. Develop a comprehensive world-class evidence-based review of stroke rehabilitation. 2. Ensure front-line workers and researchers have access to high-quality, continually updated reviews of best evidence. 3. Provide an evidence-based platform for knowledge translation research. 4. Facilitate best practice in stroke rehabilitation. **Methods:** The SREBR utilizes a well-validated methodology which includes, an extensive literature search, data extraction and analysis, study quality assessment using the PEDro scale and determination of levels of evidence, with the focus on interventions, in particular RCTs. **Results:** The 11th edition of SREBR provides detailed reviews of over 1500 studies of which approximately 800 are RCTs. Over 300 levels of evidence have been determined in the SREBR. The SREBR serves as the foundational basis for a number of research and knowledge translation initiatives. **Conclusions:** The SREBR has demonstrated the value of a comprehensive research synthesis of therapeutic interventions as a resource for front-line clinicians and researchers and an evidence-based platform for a number of provincial and national knowledge translation and research projects. This work is being supported by the Canadian Stroke Network.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48373

Type of Abstract: Review of the Literature

Title: **Efficacy of severe stroke rehabilitation**

Primary Author: Shelialah Pereira

Affiliation: University of Western Ontario

List of Authors: Shelialah Pereira, Robert Teasell, J. Ross Graham, Matthew Moses, Katherine Salter, Norine Foley

Abstract:

Efficacy of Severe Stroke Rehabilitation Shelialah Pereira, Robert Teasell, J Ross Graham, Matthew Moses, Katherine Salter, Norine Foley Purpose: To examine the evidence with respect to the processes of care and the rehabilitation outcomes associated with the rehabilitation of individuals recovering from severe stroke. Relevance: Patients recovering from severe stroke represent the greatest rehabilitation challenge and incur the highest economic burden on the healthcare system. These patients have significant impairments, have the longest lengths of hospital stay and frequently require long-term care or institutionalization. Methods: Literature review. This review was conducted as part of the Stroke Rehabilitation Evidence-Based Review (SREBR). All literature review, data extraction, synthesis, and quality assessment methods are available at: <http://www.ebrsr.com> Conclusions and levels of evidence were used to summarize findings. Results: 20 studies were identified. 10 measured the impact of severe stroke rehabilitation and 10 examined severe stroke rehabilitation interventions. Conclusions: Four Conclusions were developed from the research: Patients recovering from severe stroke have poorer outcomes compared with patients with moderately-disabling strokes. Although patients with severe strokes are seldom admitted to intensive care units, their use has been associated with lower mortality. There is strong evidence that patients with severe stroke who receive specialized interdisciplinary stroke rehabilitation have reduced lengths of hospital stay, as well as lower levels of institutionalization and mortality. The focus of successful programs designed for the rehabilitation of severe stroke patients emphasizes discharge planning and reduction of post-stroke complications.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48775

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **Evidence Based Clinical Decision Making in the Treatment of Hand Arthritis**

Primary Author: Ilene Cohen-Ackerman

Affiliation: The Arthritis Society

List of Authors: Ilene Cohen-Ackerman, Marie Eason Klatt, Susan Ellis, Antoinette Krakovsky, Susan Hannah, Maureen Riley

Abstract:

Purpose/Objectives: To examine current best practice in the treatment of clients with of a variety of rheumatoid and osteoarthritis hand conditions and to present evidence-based clinical “pearls” to apply to the treatment of clients with hand arthritis. **Relevance:** Optimizing occupational performance when treating clients with hand arthritis poses multiple challenges for the therapist. As clinicians we must learn to base our treatment decisions on a critical examination of the relevant literature and shape our practice around integration of this evidence with each clinical challenge. **Method Used:** Through a series of focus groups with therapists involved in the treatment of clients with hand arthritis, recommendations for treatment or “pearls” were developed. Focus group participants represented clinicians with academic, hospital-based and community-based practices. After synthesizing their recommendations for treatment, an extensive literature review was conducted to determine available evidence for each clinical pearl. Sackett’s criteria for levels of evidence was used to determine the strength of evidence for each “pearl”. **Results:** Through the focus groups and literature review, a comprehensive list of sixty evidence-based “pearls” was developed for application in a variety of clinical settings. “Pearls” were organized around the themes of orthotic fabrication and design, appropriate exercise, recommendations for post-operative care, and, enhancing occupational performance through assistive devices and patient education. **Conclusions:** This evidence-based process will assist therapists in using best practice in the management of these complex arthritis hand problems. Therapists will be able to make evidence-based decisions to determine their treatment interventions.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48777

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **Examination of Maintenance of Gains from a New Cognitive Behaviour Therapy (CBT) Treatment for People with Brian Injury**

Primary Author: April Arundine

Affiliation: Toronto Rehabilitation Institute

List of Authors: April Arundine, Cheryl Bradbury, B. Christensen, PhD, M. Lau, PhD, L. Ruttan, PhD, R. Green, PhD

Abstract:

Purpose: Previous research has demonstrated the efficacy of a cognitive behaviour therapy (CBT) protocol that was adapted to address the unique cognitive and emotional needs of ABI survivors, and that included a telehealth delivery modality. However, the sustainability of CBT treatment effects over time have yet to be investigated. The current study investigated whether ABI survivors maintain benefits (reduction in psychological distress) after cessation of CBT treatment over a 6-month duration in both group (G-CBT) and telephone (T-CBT) administration modalities. **Relevance:** This current line of research has the potential to positively change standard rehabilitation practices nationwide by demonstrating the benefits of allocating appropriate resources to emotional recovery after ABI. **Hypotheses:** Psychological distress will be significantly reduced and maintained over a 6-month period in the CBT group and CBT subgroups (G-CBT and T-CBT). **Methods:** Sixteen people with moderate to severe ABI (>1-year post injury) with elevated psychological distress. Participants received eleven sessions of CBT administered in either a face-to-face group format (G-CBT) or individually over the telephone (T-CBT). Post-treatment and follow-up performances on the Symptom Checklist-90-revised (SCL-90-R) and the Depression, Anxiety Stress Scales (DASS) were examined. **Analyses:** Paired t-tests for the collapsed CBT group and CBT subgroups (G-CBT and T-CBT) were undertaken from post-treatment to 6-month follow-up. **Findings:** Preliminary results reveal that psychological distress was significantly reduced and maintenance of gains was sustained at the 6-month follow-up for DASS ($t_9=3.06$, $P<.001$) and SCL-90-R ($t_9=6.36$, $P<.001$). Subgroup analyses revealed that both G-CBT and T-CBT modalities were similarly effective. **Conclusion:** Overall, the CBT treatment effects were robust, and were well maintained after cessation of treatment. This is the first adapted psychological intervention demonstrating long-term efficacy for people with ABI.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48779

Type of Abstract: Quantitative/Mixed Method Rehab Research at the Patient, Provider, Organizational, System or Policy Levels

Title: **Depression and Anxiety among Patients with a Traumatic Spinal Cord and Concurrent Traumatic Brain Injury**

Primary Author: Ephrem Pano

Affiliation: Toronto Rehabilitation Institute

List of Authors: Ephrem Pano, Cheryl Bradbury, R.E.A. Green

Abstract:

Purpose: Sustaining a traumatic spinal cord injury (SCI) can be a life altering event, yet, sustaining a dual diagnosis of SCI and a concurrent traumatic brain injury (TBI) may be even more profound and may place individuals at greater risk for emotional distress. TBI related deficits in executive functioning have been related to decreased use of adaptive coping, resulting in greater reliance on maladaptive strategies. Moreover, the use of maladaptive coping in SCI has been associated with higher levels of emotional distress. These relationships have yet to be addressed in those with SCI and TBI (SCI+TBI). The current study sought to determine whether depression and anxiety differ between patients with an SCI (SCI-only) and those with an SCI+TBI. A secondary aim is to evaluate the relationship between coping, executive functioning, and emotional status. **Relevance:** Determining whether patients with an SCI+TBI are prone to higher levels of emotional distress, and delineating the relationship between executive processes, coping and mood will allow us to better understand, monitor and treat their psychological consequences. **Hypotheses:** Higher levels of depression and anxiety will be endorsed by the SCI+TBI group. The SCI+TBI group will demonstrate lower levels of executive functioning and report greater use of escape-avoidance-coping and lower levels of problem-focused-coping. **Methods:** Eleven SCI-only patients matched on level of SCI-injury to 11 SCI+TBI patients. **Analyses:** One-tailed t-tests were undertaken on measures of mood, coping and executive functioning between both groups. **Results:** SCI+TBI patients reported significantly higher levels of anxiety and depression, compared to SCI-only patients. The SCI+TBI group tended to use more escape-avoidance coping and demonstrated lower levels of executive performance, relative to the SCI-only group. **Conclusion:** Depression, anxiety, and escape-avoidance coping are prevalent in SCI+TBI. The results from the current study suggest that SCI+TBI patients should be screened for mood and coping strategies during in-patient SCI-rehabilitation.



Monday, March 9, 2009
8:30 a.m.- 4:00 p.m.

Rehabilitation Transforming Healthcare

Toronto Marriott Downtown Eaton Centre Hotel • 525 Bay Street • Toronto, Ontario

Submission Number: 48781

Type of Abstract: Rehabilitation-related Best Practices or Organizational Innovations

Title: **Easing Transitions: The Efficacy of a Telephone Follow-Up System After Discharge from Formal Rehabilitation. An EPIC Demonstration Project**

Primary Author: Ramona Mileris

Affiliation: Toronto Rehabilitation Institute

List of Authors: Ramona Mileris, Kathryn Salisbury, BSc P.T, MEd Adult Education

Abstract:

PURPOSE: To evaluate the feasibility and efficacy of providing telephone follow-up to patients leaving inpatient and outpatient Neurorehabilitation services. **RELEVANCE:** Discharge from formal therapy can be an anxious time for many patients. The literature shows that not all patients who require assistance or advice take the initiative to call their healthcare provider. Program initiated telephone follow-up is one way to ease the anxiety associated with discharge, ensure that recommendations made at discharge are being followed, and identify issues that may require further attention by the healthcare provider or other community agency. **METHODOLOGY:** A telephone follow-up system was implemented where patients discharged from formal rehabilitation were contacted by their goal coordinator to ensure that recommendations made at discharge were proceeding as planned, and that there were no additional service needs identified or issues requiring immediate attention by their healthcare team. A standardized questionnaire with decision-making guidelines was developed, and all staff who assume the role of goal coordinator were trained in its use. Evaluation of the project included a description of issues identified, patient and staff satisfaction, and process indicators that measure impact on sustainability factors. **ANALYSIS:** Descriptive statistics **RESULTS/FINDINGS:** Preliminary results have shown that there are times when patients need additional support after discharge to follow through with recommendations. Patients find it both reassuring and helpful to know that a member of their team will contact them. To date, added workload for staff has not proven onerous, but ongoing monitoring is needed. **DISCUSSION/OBSEERVATIONS:** Results of an education/training plan and a communication plan will be shared. The challenges of sustainability will be noted. **CONCLUSIONS:** Telephone follow-up supports discharge in a feasible and effective way that meets best practice standards. This study considers one phone call per patient. Additional phone calls over time for select should be investigated.