PURPOSE: To evaluate effectiveness of stroke rehabilitation for geriatric stroke survivors through innovative approaches within Long Term Care Home. RELEVANCE: The S.T.A.R.T. project relates to the Best practice guidelines for stroke care provision stating that access to the appropriate intensity of rehabilitation services shall be ensured and available to stroke survivors throughout the continuum of care. The 2006 evaluation findings by Ontario Stroke System reflect that, overall, there are alarming variations in survivors' access to rehabilitation across the province. Provincial CIHI acute and rehab data indicate that only 24% of stroke survivors had access to inpatient stroke rehabilitation beds. This project evaluates effectiveness of the stroke rehab for geriatric stroke survivors and provides practical solutions on how to improve stroke rehabilitation within Long Term Care Homes. METHODS: The S.T.A.R.T. Program was created by application of latest research findings in stroke rehabilitation namely: S.C.O.R.E. (Stroke Canada Optimization of Rehabilitation through Evidence) and Constraint Induced (CI) therapy model and uniting them with ecological approach to patient care based on recognition of distinct uniqueness of each stroke survivor in their surroundings. Geriatric Stroke Survivors admitted into LTCH were assessed with use of the FIM instrument (CIHI granted permission for the LTCH to use the FIM tool) Intensity of the treatment was increased by applying therapeutic approach to stroke survivors by all involved multidisciplinary team members in a proportion of time ratio spend by each member with stroke survivor. RESULTS: The S.T.A.R.T. project demonstrated marked improvements in FIM scores of geriatric stroke survivors receiving treatment in LTCH. The project also resulted in increased intensity of the therapy delivered to CVA survivors. CONCLUSIONS: Geriatric Stroke Survivors can benefit from organized stroke rehab within LTC health sector. Implementation of stroke rehabilitation is essential in ensuring continuum of care and secondary stroke prevention.
ABSTRACT ID: 3

POSTER PRESENTATION

REHABILITATION HEALTH HUMAN RESOURCES: RECRUITMENT, RETENTION AND EDUCATION STRATEGIES

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PURPOSE: To conduct a literature synthesis to identify recruitment, retention and education strategies from grey and peer-reviewed literature applicable to rehabilitation professionals. To determine the feasibility and importance of these strategies for the development of a rehabilitation Health Human Resource strategy in Ontario. RELEVANCE: Given the increase in prevalence of patients with chronic and complex multi-system disorders and a shift in client transition patterns from hospitals to community, rehabilitation will need to be matched with increased human resources. Rehabilitation professionals including Occupational Therapists, Physiotherapists and Speech-Language Pathologists were shown to be in the top ten positions for which Ontario hospitals reported recruitment difficulties. METHODS: 1) Literature synthesis: Medline, CINAHL, on-line catalogues and publications from organizations were searched. In addition hand searches for articles based on reference lists of retrieved articles were conducted. All documents and relevant articles were reviewed in terms of their potential application for the rehabilitation setting. The information was collated, tabulated and synthesized based on a multidimensional interactive allied health workforce recruitment and retention conceptual model. 2) Expert Panels: Two expert advisory panels were convened; one examining recruitment and retention and the other education. We used a modified Delphi panel process to review the results of the literature synthesis and rate the feasibility and importance of the strategies. RESULTS: From 73 strategies we grouped 40 recruitment and retention strategies across three components: Quality of Worklife and Work Environment (n = 19); Workload and Skill Mix (n=6); and Financial Incentives and Marketing (n=15). From 34 strategies we grouped 24 education strategies under: Education and Training (n=11) and Professional Development (n=13). The expert panels further reduced these strategies. CONCLUSION: Key factors that need to be considered prior to strategy implementation include: geographical setting, practice environment/location, gender and generational differences, inter-professional collaboration and financial issues.
ABSTRACT ID: 4

POSTER PRESENTATION

WAIT LISTS AND WAIT TIMES FOR OUTPATIENT AND COMMUNITY REHABILITATION IN ONTARIO

Passalent*, L.A., Landry, M.D., Cott, C.A., Arthritis Community Research and Evaluation Unit, Toronto Western Research Institute. This project was funded by The Mental Health and Rehabilitation Reform Branch of the Ontario Ministry of Health and Long Term Care.

PURPOSE: To examine wait lists and wait times for publicly-funded outpatient and community physiotherapy (PT) and occupational therapy (OT) services in Ontario. RELEVANCE: Access to publicly-funded services remains a defining element of Canadian health care; however, timely access has emerged as a priority policy issue. Factors such as the aging population and increased prevalence of chronic disease are likely to impact wait lists and wait times for rehabilitation services. HYPOTHESIS: The extent of wait lists and wait times will vary depending on service, setting, and client condition. SUBJECTS: Managers and/or senior therapists of all (n=374) publicly-funded adult outpatient and community OT and PT settings in Ontario. METHODS: Cross-sectional survey using a mailed self-administered questionnaire. ANALYSIS: Descriptive statistics described wait lists and wait times by service, setting and client condition. Multivariate linear regression examined determinants of wait times in hospital outpatient departments (OPD). RESULTS: The response rate was 57.2%. There were 10 455 clients waiting for OPD or community rehabilitation at the time of the survey. The majority of clients (84%) were waiting for PT. Of these, 81% were waiting at hospital OPDs and 73% had a chronic musculoskeletal (CMSK) condition. Among clients waiting for OT, half were waiting for home-based therapy and 59% had a CMSK condition. The longest rehabilitation wait times were found at hospital OPDs. Median wait times were the longest for clients with CMSK (21 days for OT; 35 days for PT). Urban location (p=0.018) and treating clients with CMSK conditions (p=0.0003) were determinants of longer wait times at OPDs. CONCLUSION: The results of this study indicate that wait lists and wait times for publicly-funded outpatient and community rehabilitation vary depending on service, setting and condition. Most notably, wait lists and wait times are longest for people with CMSK conditions who are waiting for hospital OPD physiotherapy.
ABSTRACT ID: 5

POSTER PRESENTATION

UTILIZING GEOGRAPHIC INFORMATION SYSTEMS IN THE ASSESSMENT OF CAPACITY AND DEMAND FOR COMMUNITY REHABILITATION SERVICES IN ONTARIO

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PURPOSE: To demonstrate the application of Geographic Information Systems (GIS) as a tool to examine the geospatial distribution of existing data sources pertaining to capacity and demand of community rehabilitation services in Ontario. RELEVANCE: Understanding the geospatial distribution of capacity and demand of community rehabilitation will assist in the identification of health human resource (HHR) allocation, spatial organisation of services, and determination of rehabilitation planning needs. DESCRIPTION: Occupational therapy (OT) and physiotherapy (PT) registrant databases were geocoded to represent locations of rehabilitation capacity for Ontario and its 14 Local Health Integration Networks (LHINs). Census data from 2001 were geocoded to represent rehabilitation demand. Maps were created using GIS software to illustrate the relationship between capacity and demand of community rehabilitation services.

OBSERVATIONS/DISCUSSION: In total 150 maps were generated depicting community rehabilitation capacity and demand for each LHIN and the province as a whole. Variation in service provision for community rehabilitation was observed when clinic location was overlaid with the spatial distribution of the population. A disproportionate number of privately-funded clinics located in low income areas were observed when income distribution was overlaid with clinic location. The rates of community OTs by LHIN ranged from 14.0 to 57.5 per 100,000 population and the rates of community PTs by LHIN ranged from 22.4 to 77.2 per 100,000 population. These results imply that capacity may not match demand for community rehabilitation within certain LHINs, indicating that access to community rehabilitation within Ontario may be problematic. CONCLUSIONS: Geographic examination of service demand and capacity for community rehabilitation can assist in: health service planning; funding allocation; and, service coordination. The use of GIS can also assist in decision-making processes that can influence positive community health outcomes within defined geographic regions.
TIME TO RETHINK THE USE OF SERUM ALBUMIN AS A MARKER OF NUTRITIONAL STATE FOLLOWING STROKE?

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PURPOSE: Although serum albumin is known to be a non-specific marker, its use in nutrition assessment remains widespread. The objective of this study was to determine whether serum albumin, when used either alone or as a component of an objective nutritional assessment tool, could identify correctly patients who were malnourished. METHODS: The nutritional status of 89 hospitalized patients was assessed within 5 days of stroke onset, and again at day 21 using i) serum albumin, ii) an objective method comprised of 6 anthropometric and biochemical measurements, including serum albumin and iii) Subjective Global Assessment (SGA). The results of these assessments were dichotomized: serum albumin ≥ 35g/L = adequately nourished, < 2 indicators below reference standards = adequately nourished, ≥ 2 indicators below standards = malnourished; SGA: A = well nourished, B/C = malnourished. Using SGA as the reference standard, the sensitivity, specificity, positive predictive value and positive likelihood ratios associated with each of the remaining two assessment methods were calculated. RESULTS: At admission to hospital, no patients were considered malnourished on the basis of SGA. Thirteen patients were considered to be malnourished based on serum albumin, and 19 based on objective methods. By day 21, 9 patients were considered to be malnourished on the basis of SGA, 27 patients had an albumin value below 35 g/L and 28 patients were malnourished based on objective assessment. The sensitivity and specificity of assessment for malnutrition using serum albumin were 25% and 64%, respectively. The positive predictive value and likelihood ratio were 8% and 0.69. Using objective assessment measures, the sensitivity and specificity were 50% and 63%, respectively. The positive predictive value and likelihood ratio were 9% and 0.78.

CONCLUSIONS: Serum albumin, when used alone or as a component of a more comprehensive nutritional assessment method, was a poor predictor of true nutritional state.
ABSTRACT ID: 16

POSTER PRESENTATION

RETHINKING PERSON-CENTRED DEMENTIA CARE

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PURPOSE: This study explored how the notion of embodied selfhood – the idea that expressions of selfhood are manifest in the body’s gestures and movements - can improve dementia care.

RELEVANCE: With mounting empirical evidence that person-centred approaches to care facilitate positive health outcomes and enhance quality of life, the recognition and support of personhood should be central to dementia care. However, person-centred care fails to recognize the importance of non-verbal communication for self-expression in severe Alzheimer’s disease.

SAMPLE: This study involved a purposive sample of forty-three health care practitioners from three different long-term care facilities, with representation from nursing, physiotherapy, occupational therapy, and recreational therapy.

DATA COLLECTION AND ANALYSIS: Six focus groups were conducted with 6-8 participants in each group. Because of the diversity in disciplinary and clinical backgrounds of the participants, an alternative medium – dramatic performance – was used to enhance understanding of the notion of embodied selfhood. The production featured expressions of embodied selfhood drawn from observational research on an Alzheimer Support Unit. The production was performed at the outset of each focus group, and responses to these performances by the participants served as a springboard for discussion. Transcripts of the focus group discussions were coded according to standard qualitative coding techniques.

FINDINGS: When care is premised on the importance of recognizing and responding positively to expressions of embodied selfhood, residents’ agitation can be reduced without the need for drug therapy and other forms of restraint. This in turn can create more cooperative and less stressful caregiving interactions.

DISCUSSION: Given the significance of bodily movements and gestures for self-expression, making their recognition and support a priority in dementia care has the potential to significantly improve the quality of life for cognitively impaired residents, their quality of care, and the caregiving experience for dementia care practitioners.
ABSTRACT ID: 17

POSTER PRESENTATION

A SYSTEMATIC REVIEW OF THERAPEUTIC INTERVENTIONS FOR DYSPHAGIA POST STROKE

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PURPOSE: Despite the perceived association between dysphagia treatment and a reduction of serious complications including aspiration pneumonia, there is very little evidence to support the use of many of the therapies. METHODS: We conducted a systematic review of all randomized controlled trials (RCTs) evaluating the efficacy of the treatments associated with dysphagia therapy. The inclusion of studies was restricted to those in which the entire study sample was comprised of patients recovering from stroke and who received treatment initiated at any point following stroke. RESULTS: Sixteen articles were retrieved assessing a broad range of treatments, most provided within the first several weeks post stroke: texture-modified diets (n=4), dysphagia therapy programs (n=2), non-oral (enteral) feeding (n=3), medications, including antihypertension agents, levadopa or its agonists and selective decontamination of the digestive tract (n=4) and physical stimulation (n=3). Study sample sizes ranged from 7 to 859. Since the outcomes assessed were so diverse, results are reported based on the most frequently cited clinically relevant outcomes. Pooled analyses were conducted where possible. Dysphagia treatment was collectively associated with a reduction in the odds of pneumonia following stroke (OR: 0.36; 95% CI 0.23 to 0.54), however, treatment was not associated with a reduction in the odds of either death (OR: 0.83; 95% CI 0.68 to 1.02) or death and dependency, defined as a Modified Rankin score of greater than four (OR: 1.04; 95% CI 0.81 to 1.34). The outcomes assessed from the remaining trials are reported descriptively. CONCLUSIONS: While dysphagia is known to be a common and potentially serious complication of stroke, there is a dearth of evidence to support the effectiveness of many commonly used treatments. There is a clear and pressing need for quality research in the area of dysphagia management post stroke.
ABSTRACT ID: 18

POSTER PRESENTATION

IMPACT OF COMORBIDITIES ON THE PREDICTION OF FUNCTIONAL RECOVERY POST STROKE.

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PURPOSE: In adult rehabilitation, it has been reported that the odds of full functional recovery decrease as the number of comorbid conditions increase. The purpose of the present study was to identify common comorbidities in stroke patients and determine if either the total number of comorbidities or specific individual comorbidities contributed to the prediction of clinically significant functional recovery over the course of inpatient rehabilitation. METHOD: Pre-existing comorbidities identified from patient admission histories, admission and discharge FIM scores and FIM change were recorded via retrospective chart review for 935 patients admitted to three inpatient stroke rehabilitation programs from 1997 – 2003. FIM change was dichotomized around the minimally clinical important difference (MCID) for FIM change. RESULTS: Approximately 52% of patients recorded improvements in FIM of ≥ 22. Comorbidities reported in more than 5% of patients were identified as follows; hypertension, diabetes, high cholesterol, atrial fibrillation, arthritis, ischemic heart disease (including angina, MI and CAD), vision problems, hypothyroidism, congestive heart failure, cancer, COPD and depression. Total number of comorbidities was not correlated with clinically important FIM improvement. Significant associations were found between clinically important FIM improvement and the presence of vision problems and hypothyroidism. Using the backward elimination method of logistic regression, all 12 common comorbidities were entered into the model in addition to sex, age and admission FIM. The final model to predict clinically significant FIM improvement included age, admission FIM, vision problems, hypothyroidism, congestive heart failure and depression (R2 = 0.143). CONCLUSION: While previous reports suggest that the odds for full functional recovery decrease as the number of comorbidities increase, the present study could not confirm this finding. Specific comorbidities such as vision problems, congestive heart failure, hypothyroidism or depression, and presumably the severity of such conditions, may be more predictive of functional improvement.
ABSTRACT ID: 21

POSTER PRESENTATION

IMPACT OF CARING FOR INDIVIDUALS WITH STROKE ON PHYSICAL HEALTH AND FUNCTION OF INFORMAL CAREGIVERS.

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PURPOSE: Caring for a person who has experienced stroke can be a formidable task and the demands placed upon the often unskilled and inexperienced caregiver may be perceived as overwhelming. The majority of published studies focus on the well-being and mental health of the caregiver; however, caregivers may experience both mental and physical effects as a result of providing continuous support. A literature review was conducted to evaluate the impact of providing care to a family member with stroke on the health and physical functioning of informal caregivers. METHOD: Searches of the literature on multiple databases were conducted to identify longitudinal studies examining the physical health or physical function of caregivers from 1996 – 2006. RESULTS: 10/11 identified studies reported no significant change in caregiver health/physical function over study periods ranging from 1 to 23 months. Three studies compared caregiver scores on individual subscales or the physical component summary (PCS) of the SF-36 to age and sex matched norms; only one reported lower PCS scores at 6 and 12 months post stroke. A single study, comparing outcomes for caregiving and non-caregiving relatives, found that caregivers reported significantly worse physical function at one year post stroke. Four studies examined the influence of patient characteristics; two reported no association, one reported higher patient ADL and IADL to be associated with better caregiver health and one reported an association between carer health and patient participation in ongoing therapy. DISCUSSION: While poor physical health may be associated with increased strain, stress or depression and decreased mental health and well-being, these studies suggest that informal caregiving does not appear to result, necessarily, in reduced physical health and function over time.
ABSTRACT ID: 26

POSTER PRESENTATION

STRATEGIES FOR BEST PRACTICE INNOVATION IN REHABILITATION AND COMPLEX CONTINUING CARE (CCC)


PURPOSE: To develop and implement organizational strategies for best practice (bp) innovation in rehabilitation and ccc. RELEVANCE: BP is an approach to the planning and delivery of patient care that is patient centered, research and outcomes-based, refined through quality improvement and benchmarking, and compatible with system policies and resources. There is increasing recognition of the role of the organization in facilitating innovation and bp, particularly in constructing a bp culture through appropriate structures and processes. DESCRIPTION & DISCUSSION: Toronto Rehab has introduced innovative strategies geared towards shortening the path between best knowledge (clinical interventions research indicates should be done) and clinical practice (how clinical interventions are actually delivered) and linking this process to patient needs and outcomes. These strategies include the introduction of the Advanced Practice Leader role as a catalyst for reform to address patient needs using an interprofessional approach and to reflect the integration of research, education and practice; the development of a model and process to facilitate a systematic and consistent approach to clinical bp; the development of a bp skill development and capacity building program; and the initiation of interprofessional clinical bp initiatives specific to care areas (e.g., pain management in TJR; diabetes education and intervention in cardiac rehabilitation; management of complex behaviors in ABI; falls prevention in geriatric rehab; skin care and wound management in CCC; and symptom management at end of life). CONCLUSIONS: The importance of enabling and sustaining a bp work culture and practice change requires the vested leadership and support of the organization. Toronto Rehab responded to factors identified in the literature as enablers of bp by putting concrete processes, structures and supports in place as part of an overarching innovative organizational strategy to meet patient needs and improve patient safety, care and outcomes while using resources more effectively.
RETURN TO DRIVING FOLLOWING LOWER EXTREMITY AMPUTATION

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PURPOSE: To identify predictors of return to driving following major lower extremity amputations. RELEVANCE: There is very little research on driving post-amputation. This is the first investigation of amputee patients’ perceptions of issues surrounding the decision to return to driving. DESIGN: Cross sectional study. SUBJECTS: 123 patients with unilateral or bilateral major lower extremity amputation (63.4 ± 12.1 years). METHODS AND MATERIALS: Patients who attended the outpatient amputee rehabilitation clinic were asked to fill out a brief questionnaire regarding driving status pre-amputation and post-amputation. Questions included relevant medical history, driving history, vehicle modifications, contact with the automobile licensing authorities, concerns about driving, and any barriers preventing return to driving. RESULTS: 80.5% of the participants were able to return to driving an average of 3.8 months after amputation, although the majority reported a decreased driving frequency. Female gender (OR = .08; 95% CI = .02-.34), age > 60 years (OR = .16; 95% CI = .03-.74), right-sided amputation (OR = .13; 95% CI = .03-.52) and pre-amputation driving frequency of less than every day (OR = .18; 95% CI = .05-.69) were all significantly related to a reduced likelihood of return to driving post-amputation. Individuals with left-sided amputation have significantly less concerns regarding driving, while those with a right amputation frequently require vehicle modifications or modified driving technique. Common barriers to return to driving included preference not to drive, lack of confidence / fear, and related medical conditions. CONCLUSIONS: The majority of individuals with major lower extremity amputation are able to return to driving following major lower extremity amputation. Older female patients with right-sided amputation who drove infrequently prior to amputation were least likely to resume driving.
ABSTRACT ID: 29

POSTER PRESENTATION

CHARACTERIZATION OF PULMONARY REHABILITATION PROGRAMS IN CANADA IN 2005

*Dina Brooks1,2,4 PhD, Rebecca Sottana1 MSc (PT), Barbara Bell1 MSc (PT), Mary Hanna1 MSc (PT), Lisanne Laframboise1 MSc (PT), Sugi Selvanayagarajah1 MSc (PT), Roger Goldstein2-4 FRCP (C) Departments of Physical Therapy1, Graduate Department of Rehabilitation Science2 and Medicine3, University of Toronto, West Park Healthcare Centre4 Toronto, Ontario, Canada. Acknowledgements: Supported by: the Ontario Lung Association and West Park Healthcare Centre Foundation. Dr. Brooks was supported by a CIHR New Investigator Award.

Relevance: Pulmonary rehabilitation (PR) is recognized as the prevailing standard of care for patients with chronic respiratory conditions. National surveys of PR programs provide important information regarding the structure, content, and organization of these programs. Purpose: To conduct a national survey to characterize adult pulmonary rehabilitation across Canada, in terms of program distribution, utilization, content and outcome measures. Methods, Subjects and Materials: A cross-sectional descriptive study in which questionnaires were mailed to PR programs connected with hospitals or identified through the Canadian Lung Association. Results: Of the 98 PR programs identified, over 90% of patients in the programs had Chronic Obstructive Pulmonary Disease and 57% of the programs were outpatient. Inpatient programs accounted for only 10% of the total. The main program components included; supervised lower extremity strength (77%), cycle (72%) and treadmill (70%) training, education (75%) and breathing retraining (68%). Over 80% of patients completed their programs and 90% of patients were enrolled in a follow up component. Physical therapists, dieticians, respiratory therapists and respirologists were the most commonly identified healthcare providers. The most commonly used outcome measures were the six-minute walk test and disease specific quality of life questionnaires. Conclusion: There were similarities in program format, content, staffing, follow-up and funding among Canadian PR programs. The marked shortfall between the national pulmonary rehabilitation capacity and the prevalence of COPD meant that only 1.2% of the COPD population had access to PR.
OUTPATIENT STROKE PROGRAM AT YORK CENTRAL HOSPITAL

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PURPOSE:
To introduce the structure of the outpatient stroke program at York Central Hospital and present the summary of the program evaluation.

RELEVANCE:
To share the experience of providing outpatient stroke rehabilitation services in a small group setting at York Central Hospital.

DESCRIPTION:
Outline of the stroke program including education component.
Combine PT and OT intervention in a small group setting.
Outcome measures used in assessment and monitor patients' progress.
Program evaluation using data collected from 2004-2006. Analysis of data of outcome measures: Berg balance, Time up and go, 2 minutes walk, power grip, pinch grip, MRMT (Minnesota Rate of Manipulation Test). Evaluation of patients' satisfaction survey.

OBSERVATION/DISCUSSION:
There is a high demand for outpatient stroke rehabilitation.
On completion of the program, majority of the patients have improved in strength, balance, co-ordination and achieve their rehab goals.
Patients' feedback has been very positive. They report that the treatment is beneficial to help them to achieve their functional goals. Patients enjoy social interaction and emotional support of their peers.
There is a significant number of younger stroke patients or recurrent strokes indicating the need to educate patients and the public to prevent primary or recurrent stroke.
With adequate funding, in addition to physiotherapy and occupational therapy the program could provide other multidisciplinary services (i.e. speech language pathology)

CONCLUSION:
Outpatient stroke program in a small group setting is effective in assisting the patients to improve their functional independence to allow them to reintegrate back to their vocational or leisure activities.
Outpatient stroke group also provides patients with community resources and strategies to maintain and potentially improve their functional status and quality of life.
ABSTRACT ID: 32

POSTER PRESENTATION

SWALLOWING CARE TEAMS FOR STROKE SURVIVORS IN THE LONG-TERM CARE SETTING

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PURPOSE: To establish and train “Swallowing Care Teams” at two long-term care facilities within the Toronto West Stroke Network. RELEVANCE: This pilot project allows for an assessment of barriers to implementation of this innovative care model for dysphagia at both the individual and institutional level. In addition, this care model assists long-term care staff in implementing a standardized method by which to identify resident stroke survivors with swallowing difficulty. DESCRIPTION: Training materials created in previous related initiatives were modified and enhanced to make them applicable to the long-term care setting. Team members working at both of the long-term care sites attended training related to swallowing function, dysphagia identification and management. Two sub-groups in the team were created: screeners and feeders. Eligible screeners were RNs or RPNs. The screeners became certified in the implementation of the TOR-BSST bedside swallowing screening tool. Feeder team members were PSWs, HCAs, Activation/Restorative Staff and Rehabilitation Assistants. Training was provided by the speech-language pathologist project co-ordinator.

OBSERVATION/DISCUSSION: Two swallowing care teams were created. Eleven screeners and 35 feeders were trained across the two sites. Barriers to successful implementation included those at the adopter, innovation and practice environment levels. Recommendations to facilitate barrier management include: site readiness, communication and availability of resources. CONCLUSIONS: This care model will assist in reducing the variability in the management of swallowing in the long-term care setting. Future work should address the training needs required to sustain team member knowledge and skills over the long term.
ABSTRACT ID: 35

POSTER PRESENTATION

USING FRONT-LINE STAFF TO IDENTIFY PROBLEMS, FIND SOLUTIONS, AND TRANSFER KNOWLEDGE

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Purpose: To develop a model using front-line staff to identify problems contributing to work strain and implement solutions to real-life client handling challenges. To develop an education module for staff addressing knowledge, equipment, or process gaps. Relevance: The model of engaging front-line staff in problem solving and solution finding ultimately leads to the development of champions with expertise, influence, and the ability to transfer knowledge to staff in a collaborative manner. Description: The Work Strain Prevention Champions comprised of nurses, physiotherapists, and occupational therapists are developing expertise in work strain prevention associated with client handling. Leadership is provided from a manager and support from a program educator and program evaluator. In year one, the Champions participated in nursing education on our Lift, Transfer, and Repositioning Policy and Procedure and the use of mechanical lifts. Feedback indicated a need for more education on patient-specific handling. In response, the Champions enhanced the Bedside Assessment Process. Nurses also articulated a need for hands-on, practical training with patients in real-life scenarios. In year two, the Champions are working to increase awareness of their role as resources to problem solve difficult cases. Champions record cases and share solutions at monthly meetings. They identify root causes such as knowledge, equipment, or process gaps and describe their process and solution. Champions track challenges with a view to developing a practical education module for roll-out in year three. Observation/Discussion: The annual front-line initiatives use PDSA, are focused, achievable with a tangible end product, and sustainable. Champions have opportunity to transfer knowledge and influence decisions with the aim of reducing work strain and improving patient safety. Conclusions: This transferable model utilizes expertise of front-line staff and engages them in the solution finding resulting in increased commitment, ownership, buy-in, and influence, the pillars of a healthy workplace culture.
ABSTRACT ID: 36

POSTER PRESENTATION

LIFE STORIES: USING AUTOBIOGRAPHY AS A THERAPEUTIC AND RELATIONSHIP-BUILDING TOOL.

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PURPOSE: To increase patient’s perceptions of the value and meaning of their lives by affirming the complexity and resiliency of their life experiences. To decrease patient’s sense of isolation, loss of identity, loss of community and self-esteem. To support dialogue and relationship building between patients and staff within a complex rehabilitation and chronic care environment. RELEVANCE: Engrained within a hospital-wide, patient wellness initiative that addresses the socio-spiritual component of wellness. Part of a holistic model that recognizes physical, emotional, intellectual and spiritual components of health as defined by the World Health Organization’s Quality of Life tool. Values intimacy, connection and empowerment as means to improved quality of life. DESCRIPTION: Volunteers meet with patients for 3 - 5, one-hour sessions to gather and write life story material. At each successive visit, the volunteer provides the patient with the newly edited, written version of the story for their verbal approval and updates. Upon completion, the patient provides consent to share their story with other patients and/or family and staff. Wellness staff collect and archive the final stories, take photographs of the participants, and with patient consent, posts them on a central community board. A project is underway to have some of these stories published in a book format. OBSERVATION: Patient and staff reaction have indicated that this is a useful tool in decreasing sense of isolation and increasing feelings of meaning and purpose in the patient's life. Staff reading and learning about patient life stories report increased sense of connection to patients which influence care. CONCLUSIONS: Studies show that writing a life story is a therapeutic process that increases self-understanding and self-esteem and builds relationships in multidimensional ways. Life stories have the potential to help staff see the “person behind the patient” (Clarke, Hanson & Ross, 2003)
ABSTRACT ID: 37

POSTER PRESENTATION

A SYSTEMATIC REVIEW OF REHABILITATION INTERVENTIONS FOR WHIPLASH-ASSOCIATED DISORDERS

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RESEARCH QUESTION: We undertook a systematic review to evaluate the strength of evidence associated with various therapies for whiplash-associated disorders (WAD).

RELEVANCE: While many treatments are in use, support for their effectiveness has not been established; therefore, establishing the current evidence-base for WAD treatments will help to guide clinical practice and prioritize research initiatives. SAMPLE: Multiple databases were searched to identify all studies published from 1980-2006 evaluating the effectiveness of any clearly defined treatment for acute (< 2 weeks), subacute (2 to 12 weeks), or chronic (> 12 weeks) WAD. DATA COLLECTION AND ANALYSIS: Sixty-one studies were identified, of which 30 were RCTs. The majority of studies evaluated treatments initiated in the chronic stage of the disorder (n = 30). Forty-three evaluated non-invasive interventions, 12 evaluated medically-based interventions, and 6 evaluated surgical interventions. FINDINGS: For the treatment of acute WAD, strong evidence (> 1 RCT) exists in support of early mobilization with a focus on light neck exercises and for pulsed electromagnetic field treatment, while strong evidence suggests that soft collars, rest, and simple educational interventions are ineffective treatments. Interventions supported by moderate (1 RCT) to limited (at least 1 non-RCT) evidence include both high-dose methylprednisolone infusions and advice to “act as usual” in the treatment of acute WAD; progressive strength training and chiropractic manipulation of the cervical spine for subacute WAD; and botulinum toxin-A and sterile water trigger point injections for chronic WAD. DISCUSSION: In order to provide patients with the most effective care, treatments supported by strong evidence should be incorporated into current whiplash rehabilitation programs and services. Although definitive treatment recommendations cannot be made on the basis of limited to moderate levels of evidence, these are promising areas for further research.
ABSTRACT ID: 41

POSTER PRESENTATION

A MODEL OF COORDINATED SERVICE FOR ADULTS WITH SPINA BIFIDA

*Litman, S. Hawkins, L. Nelson, K.

Across Canada, health care systems are witnessing significant growth in the number of young adults living with a chronic condition or illness. As a result of improved pediatric care and interventions, children with conditions formerly known only in childhood are now living well into adulthood. However, there has been little planning with respect to how to transition these individuals from the pediatric services they have relied on since birth into community based care as they enter adulthood. This problem is compounded by a lack of a structure to support community physicians in dealing with the complex medical and psychosocial needs of these populations. The Adult Spina Bifida Transition Demonstration Project represents an attempt to enact a model of service, targeting a specialized patient population (spina bifida), which provides coordinated primary and tertiary-level care. Central to the model are the facilitation of community capacity-building, the promotion of chronic condition self-management, and a focus on addressing both emergent and longer range transition issues. The immediate goal (the Short-Term Model) of the project involves establishing a program that provides tertiary-level service to adults with spina bifida to meet their complex medical needs while setting the stage to facilitate the inclusion of primary care. This stage includes the building of a repository of resources and educational materials, developing a strong identity as centre of excellence with respect to spina bifida, increasing awareness about spina bifida in the community in general and among community-based providers, and establishing links with community partners and care providers to support the Long-Term Model. The overarching aim of the Project is to serve as a model of service delivery which coordinates primary and tertiary health care needs within a community setting, a model which can then extend to other patient populations with conditions formerly considered disorders of childhood (e.g. autism).
ABSTRACT ID: 44

POSTER PRESENTATION

ADVANCING REHABILITATION RESEARCH ONTARIO

*Rigby, P.; Beaton, D.; Berg, K; Brouwer B.; Cameron D.; Colantonio, A.; Egan M.; Hayes, K.; Jaglal, S.; MacDermid, J.; Polatajko, H.; Stolee P.; and Switzer-McIntyre S. Work completed through University of Toronto, University of Waterloo, University of Western Ontario, University of Ottawa, Queens University.

PURPOSE: The Ontario Rehabilitation Research Advisory Network (ORRAN) promotes and advances rehabilitation research. Knowledge exchange is a key priority. RELEVANCE: This network supports dialogue and collaborations amongst researchers, clinicians, consumers, policy-makers and funders. DESCRIPTION: has five rehabilitation research theme areas: Aging and Disability, Health Services Research, Musculoskeletal Rehabilitation, Neurological Rehabilitation, and the Children’s Rehabilitation Research Network (CRRN). The themes develop knowledge exchange networks, increase funding for rehabilitation research, build the capacity of rehabilitation research, and support collaborative research initiatives across the province. Theme areas play a strong role forging links with clinicians, researchers, consumers and policy-makers by expediting the translation of research knowledge into policy and practice. They also encourage clinicians and consumers to bring forward pertinent and practical research questions. We developed a dynamic knowledge exchange website to enable researchers, clinicians and others to learn about each other’s interests, research initiatives and findings. We hope this will foster new research collaborations. We also host workshops to facilitate networking and developing topic-specific research partnerships. We invite network members to develop summary sheets about their key research outcomes, and edit using plain language guidelines. Summaries are posted on our website for quick and easy communication to stakeholders. DISCUSSION: The ORRAN themes have achieved important gains in research initiatives and knowledge exchange outcomes. For example, the Children’s Rehabilitation Research Network has recently published a position paper entitled “Childhood Rehabilitation Research Conceptual Approach, Values, and Methodological Issues.” Their future plans include developing a training workshop based on the paper, and compiling a database of funding agencies supporting childhood rehabilitation research. CONCLUSIONS: ORRAN provides a key mechanism in the province of Ontario for knowledge exchange in rehabilitation. The ORRAN theme areas welcome new members with an interest in rehabilitation research, including researchers, health professions, health service organizations, consumers, and government sectors.
ABSTRACT ID: 45

POSTER PRESENTATION

A HOME SAFETY OUTCOME MEASURE AND EVALUATION TOOL, VERSION THREE

*Oliver, R., COTA Health; Chiu, T., COTA Health COTA Health will financially support the work being presented.

PURPOSE: the purpose of this poster presentation is to showcase the SAFER HOME Version Three, an Occupational Therapy home safety outcome measure. The difference between the first two versions and third version is the adaptation of the assessment tool into an outcome measure.

RELEVANCE: This tool is an outcome measure designed to evaluate home safety assessments and interventions delivered by Occupational Therapists. Two earlier versions of the tool have been tested in various studies. Those studies, together with clinician feedback, identified the need to revise the tool to improve its clinical usability and psychometric properties.

DESCRIPTION: the investigation team, consisting of six Occupational Therapists with a range of clinical backgrounds and research experience, set revision criteria based on findings from a factor-analysis study and on feedback from home safety assessment tool users. In a series of meetings team members examined each item included in the tool. As needed, an item was revised in terms of its title, observation, and assessment guidelines, intervention recommendations, and/or categorization.

OBSERVATIONS/DISCUSSION: Twenty-six items from version two of the safety assessment were removed or collapsed with another item. Nine new items were added to version three. Hence, the total number of safety items was reduced from ninety-three in version two to seventy-five in version three. The total number of categories was also reduced from fourteen in version two to eleven in version three. The categories of version three include: Living Situation, Mobility, Environmental Hazards, Kitchen, Household, Eating, Personal Care, Bathroom and Toilet, Medication, Addiction and Abuse, Recreation, Communication and Scheduling, and Wandering. Occupational Therapists in the organization have now been trained to use the new tool.

CONCLUSIONS: This tool represents a carefully constructed Occupational Therapy outcome measure. Version three can be used by practitioners, educators, and researchers to evaluate home safety assessment and intervention.
ABSTRACT ID: 53

POSTER PRESENTATION

CARDIAC REHABILITATION: STRENGTHENING THE CORE BY BUILDING EFFECTIVE PARTNERSHIPS.

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PURPOSE: The Cardiac Rehabilitation and Secondary Prevention Program (Cardiac Program) provides comprehensive cardiac rehabilitation using a multidisciplinary, evidence-based approach for aerobic exercise, resistance training, education and counseling for patients with heart disease. The team has recently implemented innovative clinical streams to address the changing needs of patients referred for cardiac rehabilitation. Strengthening existing and building new partnerships was an integral component in developing these streams. The purpose of this presentation is to (1) highlight current components of the Cardiac Program and (2) present a framework for building effective partnerships. RELEVANCE: New clinical streams within the Cardiac Program reflect the increasing complexity of patients referred to rehabilitation. This patient group includes an aging population and an increase in multiple health related issues specifically diabetes, heart failure and stroke. Building new partnerships, across the continuum of health care; supports clinical programs as they develop strategies to address this increased patient complexity. DESCRIPTION: This presentation describes specialized clinical streams within the Cardiac Program; including patient demographics and strategies to successfully meet the patient’s cardiac rehabilitation goals. We will also present a partnership framework; developed to facilitate and strengthen collaboration with other programs and organizations to better meet the needs of this patient population. DISCUSSION: Specialized clinical streams and successful community partnerships have facilitated patients with complex needs to benefit from participation in cardiac rehabilitation. These models of service delivery and partnership development may be utilized in other health care environments to improve access to rehabilitation for people living with multiple health related issues in addition to cardiac disease. CONCLUSIONS: Cardiac rehabilitation and secondary prevention programs are challenged with addressing the increased complexity of patients referred to their programs. The Cardiac Program offers innovative clinical streams and a partnership framework to support teams in their endeavor to provide excellence in patient care.
ABSTRACT ID: 54

POSTER PRESENTATION

MULTI-SITE TELEHEALTH CARDIAC REHABILITATION PROGRAM FOR RESIDENTS OF NORTHWESTERN ONTARIO

Kmill, Caterina* Thunder Bay Regional Health Science Center; Third, Gwen* Thunder Bay Regional Health Center. Financial Support Change Foundation Grant 2006

PURPOSE: To develop and implement a multisite cardiac rehabilitation program using telehealth technology: RELEVANCE: Heart and Stroke Foundation and ICES Atlas identify geographic area of Northwestern Ontario to be "Hot Spot" for Cardiac Disease. Fifty percent of population of Northwestern Ontario is without access to program. DESCRIPTION: Formal partnerships with 4 regional sites have been established. Based on the 2001 CCN model for Cardiac Rehabilitation a delivery model utilizing telehealth technology to link partner sites to coordinating site for program delivery has been established. DISCUSSION: To date, response by professional staff in regional partner sites and participants have been favourable. It is anticipated that patient outcome indicators will match those evidenced by the pilot project. To date we have had 46 regional participants in the exercise segment, with 6 having completed the 6 months of programming. We have also had 30 multisite education sessions, with positive feedback to date. Formal evaluation of program is pending. Conclusion: Following the 2 year evaluation period it is predicted that this model of care delivery will provide access to Cardiac Rehabilitation full service programming to clients in underserviced and geographically isolated communities within North Western Ontario with outcomes that are comparable to participants of the coordinating site in Thunder Bay.
ABSTRACT ID: 56

POSTER PRESENTATION

NATURALISTIC REHABILITATION FOR EXECUTIVE DYSFUNCTION

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PURPOSE: The objective of this pilot study was to test the applicability of the Cognitive Orientation to Occupational Performance (CO-OP) approach for use with adults with executive dysfunction arising from traumatic brain injury (TBI). RELEVANCE: Meta-cognitive strategies appear to have a positive effect in the rehabilitation of executive dysfunction. However, achieving generalization to daily life remains a challenge. We believe that providing rehabilitation in the person’s own environment using activities identified by them as important and meaningful will enhance the benefits of meta-cognitive training and promote generalization. PARTICIPANTS & METHODS: A combined single-case, pre-post test design was used with three adults, 10+ years post-severe TBI. Assessments included neuropsychological tests of attention, memory and executive function, a naturalistic assessment of executive dysfunction (Multiple Errands Test), a standardized interview to set goals, and ongoing videotaped observation of activity performance. The intervention entailed guiding participants to use a meta-cognitive problem solving strategy in the performance of their selected activities. The intervention occurred over 20 sessions (1-hour each) over 10 weeks, in participants’ environments (e.g., home, local grocery store etc.). RESULTS: All participants improved their performance on trained activities. There were some indications of transfer to trained tasks. For 2 of the 3 participants, a caregiver committed to continuing to use this approach for acquiring additional daily living activities. CONCLUSION: The CO-OP Approach has the potential for use with adults with TBI. It is a unique approach to rehabilitation for people with cognitive impairments as contextual it is focused solely on activities identified by the participants as important to them.
ABSTRACT ID: 57

POSTER PRESENTATION

THE COACH PROGRAM: AN INNOVATIVE APPROACH TO PATIENT SUPPORT

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Purpose: To answer the need for enhanced education and social support for patients undergoing elective hip and knee arthroplasty. Relevance: The Coach Program is an innovative concept for patient support, which is widely applicable for various patient populations. As hospital lengths of stay decrease, health care teams are challenged to address increasing patient anxiety. This anxiety often acts as a barrier to patients’ participation in rehabilitation, discharge planning and return to normal function. The inclusion of family and friends as coaches can decrease patient anxiety and promote successful outcomes. Coaches act as a motivator, a resource and a “second set of ears” during preoperative planning, the hospital stay and coping at home following discharge. Description: The guiding principle of The Coach Program is to utilize patients’ social support systems to improve learning, confidence and return to function. Patients are encouraged to identify a friend or family member who will act as their coach. This program was initiated following a review of American arthroplasty centres, which described positive results with formalized use of patients’ social supports. An interdisciplinary committee refined this concept into The Coach Program. Promotional materials were created including brochures, posters and coach identification badges. Education sessions were provided for staff and patients. Observations/Discussion: The Coach Program is an ongoing initiative, which is well received by patients and staff. A staff survey conducted in Spring 2006 indicated that staff felt this program has a positive effect on patient anxiety, recovery, and staff interaction with patients. Conclusions: Coaches provide patients with emotional and instrumental support across the continuum of care. They can facilitate increased participation in rehabilitation and improve communication with the health care team, allowing for seamless transitions from preoperative to postoperative function. A survey is currently being developed to solicit patient feedback about The Coach Program. Expansion of the program is under review.
ABSTRACT ID: 58

POSTER PRESENTATION

ADVANCING TELEREHABILITATION RESEARCH, EDUCATION AND BEST PRACTICE COLLABORATIVELY.

Reimer, L.*, Alberta Centre for Telerehabilitation; Henderson, I., Glenrose Rehabilitation Hospital, Capital Health; Liu, L., University of Alberta; Iskiw, B., Regional Telehealth, Capital Health, Edmonton, Alberta.

PURPOSE: A new Centre was established from a need to strengthen connections between university health science faculties and health regions in order to advance research and practice in telerehabilitation. RELEVANCE The rapid growth and use of technology and informatics in health care is changing the delivery of health services including rehabilitation. Research regarding what factors contribute to successful use of telerehabilitation, and ways to share this evidence are needed to support best practice in telerehabilitation. DESCRIPTION: Telerehabilitation uses communications and information technologies to deliver rehabilitation services and information across distances. This Centre brings together clients, educators, researchers and health providers to advance research, education and best practice in telerehabilitation. The Centre provides supports, information and services, and facilitates connections between rehabilitation experts and those who need it. Building evidence in telerehabilitation, and educating current and future rehabilitation practitioners on how to integrate technology into daily practice, will support and strengthen best practices in telerehabilitation. OBSERVATION/DISCUSSION: The Centre carries out research to understand factors that contribute to successful use of telerehabilitation, and the feasibility of new technologies such as web-based applications, telemonitoring and virtual reality. Studies underway include comparison of face-to-face services versus videoconference; qualitative analysis of follow-up care; and applications of remote telementoring. Education initiatives focus on integration of telehealth technology into daily practice, and telerehabilitation curricula for entry-level and practicing professionals. CONCLUSIONS: The Centre’s strategic goals, key activities and future directions to advance telerehabilitation evidence and practice will help support rehabilitation clinicians deliver appropriate and timely rehabilitation services across distances.
QUALITY OF LIFE AND RETURN-TO-WORK IN SUBACUTE LOW BACK PAIN

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PURPOSE: To determine changes in quality of life (QoL) scores before and after participation in a return-to-work (RTW) rehabilitation program. To explore associations with RTW.

RELEVANCE: Work fulfills an important role in people’s lives. Being unable to work can have a major impact on one’s quality of life. In Canada, soft tissue injuries in the Ontario workforce account for 60-65% of all lost time claims, forty percent of which are back injuries. It is important to appreciate the burden of back pain on injured workers’ health status.

HYPOTHESES: There will be significant improvements in quality of life following program participation. Compared to those back to work (RTW), those still off work (Non-RTW) will report poorer QoL. PARTICIPANTS: 147 patients with subacute nonspecific low back pain participated in this study. They ranged in age from 18 to 64 years with the mean age of 39.7 (±9.7) years. Time since onset was 30.5 days, and average LOS was 2.5 (±2) months. Seventy-two participants were available to provide complete pre and post data. METHODS AND MATERIALS: A pre-test and post-test study design was used, with data collection on admission and discharge. QoL was measured using the SF-36, which assesses eight health concepts; physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional, and mental health. ANALYSIS: Data were stored and analyzed in SPSS. t-tests were used to compare group means pre-test to post-test, and RTW to Non-RTW. RESULTS: There were statistically significant differences (p<0.05) between comparison groups. Participants who had failed to return to work by program completion reported poorer quality of life in all domains except Role Physical (p=0.06) and Vitality (p=0.11). CONCLUSIONS: Quality of life improved significantly post-treatment. However, compared to those working, patient still off work at program completion reported a greater burden of illness associated with their back pain.
ABSTRACT ID: 62

POSTER PRESENTATION

PHYSICAL, QUALITY OF LIFE AND NUTRITIONAL OUTCOMES IN HEMODIALYSIS PATIENTS ON EXERCISE.

Heck, C.S., University Health Network; Darling, P., St. Michael's Hospital; Kerby, J., St. Michael's Hospital; Lee-Yu, N., St. Michael's Hospital; Lee, S., St. Michael's Hospital; Frazer, J., St. Michael's Hospital; Cook, D., St. Michael's Hospital; Hardy, D., St. Michael's Hospital; Yang, C*, St. Michael's Hospital; Kareem, J., St. Michael's Hospital; Saunderson, R., St. Michael's Hospital; Cochrane, N., St. Michael's Hospital. Funded by the Kidney Foundation of Canada.

PURPOSE: To evaluate physical performance, quality of life and nutritional status of end stage renal disease (ESRD) patients on haemodialysis following implementation of an exercise program. RELEVANCE: Patients with ESRD have high mortality, high morbidity and a low quality of life which has been shown to be related to malnutrition and compromised physical functioning. HYPOTHESIS: It was expected that exercise during hemodialysis would result in an improvement in physical performance, quality of life and nutritional status outcomes in this population. SUBJECTS: Subjects (n=39) were randomized to either an exercise (3x/week) or attention placebo (non-exercise control) group. Participants were primarily male (59%), aged 51.6 ± 15.2 years, primary cause of renal failure was diabetes (14%) and/or hypertension (25.6%), and had been on HD 45.8 ± 50.72 months. METHODS: Data collected at baseline, 6 and 12 weeks post-intervention included: physical performance [six minute walk tests (6MWT), timed-up-and-go (TUG)]; quality of life [SF-36 Health Survey (SF36) and Illness Intrusiveness Rating Scale]; measures of nutritional status [estimated dry weight, Subjective Global Assessment score, lean body mass, dietary energy and protein intake]; biochemical values from routine blood work, and functional measures [Human Activity Profile (HAP) and functional autonomy (SMAF)]. RESULTS: The following significant (p<0.05) changes were noted in the exercise group only: TUG scores improved from 11.9 +/-10.4 to 8.3 +/- 3.8 seconds, 6MWT distance improved from 407.0 +/- 136.8 to 469.4 +/- 136.3 metres, improvement in HAP from 63 to 74, a subscore improvement on SMAF. There were no significant improvements in the quality of life measures or changes in nutritional status in either group over the course of the study. CONCLUSION: The results of this study provide evidence that exercise had a positive impact on the physical performance and functional measures for ESRD patients on hemodialysis.
ABSTRACT ID: 63

POSTER PRESENTATION

A RETROSPECTIVE ANALYSIS OF AN INTERDISCIPLINARY GERIATRIC DAY HOSPITAL PROGRAM.

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PURPOSE: To investigate the effect of an individualized Geriatric Day Hospital (GDH) program on the attainment of a mobility-oriented goal as measured by the Goal Attainment Scale.

RELEVANCE: In the few studies, largely from the United Kingdom, addressing GDH, there are conflicting opinions about the role and efficacy of GDH rehabilitation programs. Further, few physical outcome measures were used and no firm conclusion was reached on goal achievement as a measure of client progress in GDH.

HYPOTHESIS: An integrated model of client care delivered by a team of GDH health care professionals and informal caregivers will significantly improve balance and functional mobility outcome scores which will be reported by the clients as an improvement and/or achievement of their mobility-oriented goal.

SUBJECTS: Approximately 300 previous GDH clients at North York General Hospital from January 2004 – December 2006 will be included.

METHODS AND MATERIALS: Hospital charts will be reviewed to obtain scores for six outcome measures including: the Berg Balance Scale (BBS), Two-minute walk test (2-MWT), Geriatric Depression Scale (GDS), Life Satisfaction Score (LSS), Folstein Mini Mental State Exam (MMSE), and Goal Attainment Scale (GAS).

ANALYSIS: Data will be collated and entered into a database using SPSS-PC (Version 13.0) (SPSS, Chicago, IL), and reported using group means ± standard deviations, range and mode values. Paired t-tests will be calculated to determine significant change pre- and post-GDH intervention, and Pearson r correlations will be used to determine relationships among outcome measures.

RESULTS: The majority of clients are expected to have improved functional mobility and GAS outcomes (p<.05). A relationship (Pearson r .5) between BBS and GAS change scores would provide validity data for the GAS.

CONCLUSIONS: The data are expected to provide evidence for the importance of GDH to affect positive health outcomes in frail elderly community-living adults.
ABSTRACT ID: 64

POSTER PRESENTATION

DEVELOPING AN INTERPROFESSIONAL MODEL OF CARE FOR LTLD/HTLD STROKE REHABILITATION

*Smith, Katherine* Providence Healthcare; *Keown, Anne* Providence Healthcare; *Jarman, Carol* Providence Healthcare.

Purpose: Enhance the clinical outcomes for patients and their families/caregivers; improve efficiency and resource use in service provision; reduce length of stay. Relevance: The interprofessional model of care enhances effective, efficient rehabilitation 24/7; provides enhanced communication, clarity and coordination of services, maximizes therapeutic patient outcomes. Description: Within the interprofessional model of care, the team developed a care map of the processes from patient preadmission to post-discharge and a video describing the role of each team member. A quality improvement approach and techniques identified, analyzed and developed these components of the innovative model of care. This included: literature reviews, brainstorming techniques, patient and family focus groups, workshops and visits to other similar facilities to determine best practices and process improvement. Observation/Discussion: The interprofessional care process map is used as a reference tool to plan and guide care throughout the patient’s stay. The team refers to the process map at team and family meetings. Use of the care process map promotes continuity of care, patient and family satisfaction and goal achievement. The video increases understanding, clarifies responsibilities and improves communication and collaboration. The effectiveness of these processes will be measured through patient, family and staff satisfaction surveys. Conclusion: Developing and implementing the interprofessional model of care has fostered greater clarity, cohesiveness and coordination among team members. One of the challenges of developing an interprofessional care process map is that it is complex to introduce and sustain, requiring ongoing time and commitment. The structure of the care process map and the video about the roles provides a sustainable framework. The ultimate goal is to have a model of care that promotes effective communication, collaborative practice and improves clinical outcomes.
IMPLEMENTATION AND EVALUATION OF A LTLD STROKE REHABILITATION PROGRAM

*Jarman, Carol* Providence Healthcare; *Nichol, Norma* Providence Healthcare; *Crossan, Sharon* Providence Healthcare.

Purpose: Provide rehabilitation programming to an underserviced patient population group that does not meet admission criteria for an active inpatient stroke rehabilitation program. Relevant: Survivors of severe strokes can achieve improved functional outcomes with discharge home if the necessary supports are in place. Description: Providence Healthcare is an industry leader in establishing LTLD (step-down) rehabilitation in complex continuing care beds. High Tolerance Short Duration and Low Tolerance Long Duration patient streams were coholed into two separate and distinct stroke rehabilitation programs: active and step-down stroke rehabilitation, each with its own established admission, discharge, and length of stay criteria. The LTLD rehabilitation program emphasizes gradual rehabilitation based on patient's tolerance levels. Therapy session times are gradually increased based on the patient's progress. Length of stay is longer, on average 12-16 weeks. Observation and Discussion: Research about stroke rehabilitation demonstrates that severe stroke survivors can achieve improved functional outcomes, are discharged home and are often better managed in a LTLD rehabilitation program. With limited access to LTLD stroke rehabilitation, stroke survivors are often discharged directly to long-term care without receiving any rehabilitation. Referring partners indicate that this approach is helping to relieve ALC pressures in acute care facilities and therefore acts as a system solution. Conclusion: The LTLD rehabilitation program is highly successful based on the 70% discharge home rate outcomes. The 30% of patients admitted to long term care have made improvements in mobility and functional abilities and will have lighter care requirements. Based on the success of this program, additional complex continuing care beds were assigned to the LTLD program to 2003.
ABSTRACT ID: 69

POSTER PRESENTATION

CONSENSUS ON BEST PRACTICES FOR TRANSITION TO ADULT SERVICES FOR YOUTH WITH DISABILITIES


PURPOSE: An international consensus workshop took place on May 11, 2006 to address the issue of preparing youth with disabilities and/or special health care needs for adult life and for transfer to adult services. The challenge of transition to adult health/rehabilitation services is gaining recognition around the world and there is minimal published literature to guide practice and policy. The objectives of the meeting were 1) to share expert practice, research and policy, 2) to generate recommendations for best practices, and 3) to generate strategies for international collaborative research and capacity building. RELEVANCE: The workshop results will provide guidelines to service providers in pediatric and adult health/rehabilitation, administrators, researchers and policy makers about preparing youth with disabilities and their families for adult life, as well as recommendations for the actual transfer process to adult health/rehabilitation services. DESCRIPTION: Thirty-two international experts were invited to attend the workshop. Principles of transition were grouped into four main themes, which were: 1) the process of transferring youth and families to adult health/rehabilitation services, 2) ‘growing up ready’, 3) shared management, and 4) professional education. Participants worked in a series of small group sessions to discuss best practices for each theme and ideas for collaborative research and capacity building. OBSERVATION/DISCUSSION: The outcome was a series of recommendations for best practices based on the four general themes of transition principles. Participants responded that there is a need to continue to share information and to work collectively on international research and capacity building. CONCLUSIONS: The significance of the consensus meeting is that it provides a baseline of information about transition that can be used to plan service delivery, to educate clients, clinicians and organizations, to conduct research and to develop policy. A final report will be submitted to an international journal.
A NEW MEASUREMENT APPROACH OF HAND FUNCTION FOR INDIVIDUALS WITH CERVICAL SPINAL CORD INJURY (SCI): THE TETRAPLEGIA HAND MEASURE (THM)

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Study Design. A sensorimotor hand function construct was used to develop the THM. Existing measures: Semmes Weinstein Monofilaments (SWM), Vibration Sense-256 cps (VIB), Static Two Point Discrimination (S2PD), Dynamometry (DYN), Manual Muscle Testing (MMT), and the Modified Sollerman Hand Function Test (MSHFT) were aggregated to measure hand impairment. The THM was tested on a sample (n=30, 13 complete and 17 incomplete) to determine the clinical utility, feasibility, and compare the results with the American Spinal Injury Association’s International Standards of Neurological Classification of Spinal Cord Injury (ASIA). Objective. The aim of this study was to develop a multi-domain approach for the measurement of hand function for individuals with tetraplegia (CO to T1) which would provide a detailed profile of integrated sensorimotor hand function at a time point and longitudinally. Summary of Background Data. Hand function is of critical importance to independence and quality of life for individuals with tetraplegia. Measurement strategies sensitive to subtle but important change in hand function for tetraplegia are not yet well developed. An approach of measurement that is sensitive and responsive, and that can be used to assess the extensive variability of sensory and motor changes post injury is required. Results. The THM was deemed feasible and clinically useful with minor modifications which entailed the refinement of the sensory test locations and elimination of dynamometry. The THM determined differences within individuals and between groups (C5 to T1), that were otherwise defined by the ASIA impairment scale as the same. Conclusions. The THM is a sensitive multi-domain approach for measurement of hand function and has utility to evaluate the varying presentations, after cervical spinal cord injury.
ABSTRACT ID: 71

POSTER PRESENTATION

EVOLUTION OF STUDENT EDUCATION: INTERPROFESSIONAL EDUCATION IN SPINAL CORD REHABILITATION

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PURPOSE: To evaluate the effectiveness of the Interprofessional Education (IPE) student placement program on 1) students’ understanding of various health professionals’ roles 2) students’ understanding of the need to collaborate in order to optimize patient outcomes; 3) spinal cord rehabilitation-specific learning; 4) impact on the interprofessional teams working with the students. RELEVANCE: Spinal cord rehabilitation (SCR) requires expert professionals working collaboratively to achieve best outcomes. Given the complexities of care within SCR, no one professional can address all of a patient’s needs. However, the skills required to collaborate interprofessionally are rarely addressed in health professionals’ curricula. In response, a unique interprofessional education (IPE) student placement program has been successfully run in a SCR program to address complex student learning needs from an interprofessional perspective. DESCRIPTION: Two groups of interprofessional students were placed together as teams during two placements in 2006. Students participated in facilitator-led introductory sessions, weekly patient-themed discussions and a group presentation. Students, staff and facilitators provided qualitative data regarding their experiences via surveys and focus groups. Students also completed a pre and post evaluation using the Interdisciplinary Education Perceptions Scale. OBSERVATION/DISCUSSION: Students, staff and facilitators relayed very positive comments regarding their experiences. Students highlighted their enhanced knowledge of and comfort with working with a range of professionals. Several staff benefits also occurred such as enthusiasm around interprofessional initiatives. CONCLUSIONS: The IPE student placement program has yielded numerous benefits for both students and staff. In particular, the program has been an effective means for students to learn with, from, and about each other. Based on these successes, plans are underway to expand the IPE student placement program by conducting placements in the 2 remaining SCR program teams in 2007.
ABSTRACT ID: 74

POSTER PRESENTATION

MONITORING THE IMPACT OF EFFICIENCY INITIATIVES ON HEALTH OUTCOMES IN TOTAL HIP ARTHROPLASTY

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PURPOSE: To describe health outcomes following primary total hip arthroplasty (THA) around implementation of a reduced LOS initiative. RELEVANCE: Efforts to reduce length of stay (LOS) and improve wait times are important, but should not diminish health outcomes and recovery. HYPOTHESIS: Routinely collected data can be used to monitor the impact of an efficiency initiative in THA. SUBJECTS: Two groups of THA patients: 6-18 months before, and 6-18 months after LOS initiative was implemented. METHODS AND MATERIALS: Secondary analysis of quality of life (QoL) data which included WOMAC and SF-8 data, as well as length of stay, age and gender. Subsets of patients were matched by age, sex, and season of surgery for paired analysis. Sample demographics, baseline status, and QoL change scores were described and compared between groups and over time. Graphs were used to map individual trajectories of recovery for visual analysis. RESULTS: Hospital statistics confirmed shifts in LOS with more patients discharged within 4 days (26% before versus 41% after). In our QoL subset (121 before, 135 after) the same trend was present, though no longer significant, however the shift in processes of care had still occurred. There were no differences in baseline QoL and only one significant difference in the 3- and 12-month follow-up scores (MCS at 3 months (pre vs. post): 54.1 vs. 50.6; p=0.01). There were neither significant differences in the change of scores over time (0-3 or 0-12 months) nor individual trend lines. Matched analysis revealed the same trends, while controlling for potential confounders. CONCLUSION: Routinely collected data allowed us to evaluate the impact of reduced length of stay on functional outcomes. Trajectories of function showed early gains in most patients, with some dip in mental component scores in some patients at 3 months. Routinely collected data did not show any trend towards a different trajectory after this initiative.
SCIRE, a systematic review of rehabilitation interventions for spinal cord injury (SCI), will make evidence-based knowledge available to consumers, health care professionals and policy makers. Objectives: 1) To identify priority areas in SCI rehabilitation for which research evidence is strong and should be transferred rapidly and effectively to improve SCI care and 2) to identify areas where evidence for effectiveness is lacking. Methods: Relevant articles were identified from various bibliographic databases from 1980-2006. Methodological quality of interventional studies was evaluated by 2 independent reviewers using the Downs and Black checklist and PEDro (RCTs only). To date, greater than 10,000 papers have been identified with 1002 of these meeting criteria for data extraction. Findings were grouped by topic, tabulated and summarized. A modified version of Sacketts’ levels of evidence was used to provide a bottom line recommendation for each topic. For example, evidence for the effects of functional electrical stimulation (FES) cycling on the prevention or treatment of bone loss after SCI is limited. Nine pre-post uncontrolled studies were identified. Five of these studies found no change in areal bone mineral density (aBMD). Four studies reported a positive effect on bone parameters (improvements of 10-18% in aBMD) using a protocol of 3 sessions/week for at least 6 months. Conclusions: An information gap separates many stakeholders involved in SCI rehabilitation from relevant research findings. The SCIRE project aims to close that gap and make knowledge translation a reality for consumers, health care professionals and policy makers.
ABSTRACT ID: 76

POSTER PRESENTATION

ENHANCING WRITTEN PRODUCTIVITY WITH TECHNOLOGY FOR A CLIENT WITH A PHYSICAL DISABILITY AND SPEECH DIFFERENCES

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PURPOSE: To explore ways that enable a client with a physical disability and significant speech differences to meet her writing needs when traditional technology methods are not successful.

RELEVANCE: There is a population whose writing needs are not served by traditional uses of existing technology. This case presentation describes new ways to apply existing technology to meet the writing needs of this population.

DESCRIPTION: This is a case study of a 16 year old client with cerebral palsy and moderate to severe dysarthria who required an efficient writing method. She planned to study journalism in university. Traditional methods (e.g., small keyboard, switch input) were not efficient for completing written work and online chatting in a timely manner. Initially, continuous speech recognition technology was used, but it did not recognize the client’s dysarthric speech even when she spoke in a discrete manner (i.e., speaking one word at a time). A literature review led to a trial using speech commands (i.e., short phrases used to instruct the software to perform specific actions) in combination with word prediction. Commands were used to type single letters (e.g., the command “my ape” produced the letter “a”). These commands were customized by a speech-language pathologist using the client’s phonetic repertoire. The word prediction software provided a number of choices of words based on the initial letter/s. Subsequently, a new product, which combined speech recognition and word prediction, recognized entire words spoken by the client. The product was originally designed for those with learning disabilities.

OBSERVATION/DISCUSSION: The client noted that the technology increased her speed of writing and reduced her fatigue significantly. She reported that this increased her productivity.

CONCLUSIONS: This new technology holds promise as a writing method for people with physical disabilities and speech impairments. Further research will determine who can benefit from this technology.
Abstract ID: 77

Poster Presentation

From Paper and Excel to a User-Friendly Electronic Scorecard


Purpose: An evaluation of the organization’s reporting processes showed that performance measurement (including outcomes in patient care) was resource intensive for unit managers, decision support and quality. Our solution was to develop an intuitive electronic scorecard, the Ready Access Dashboard (RAD). Relevance: Utilizing the latest web-based technology for monitoring indicators has enabled a more efficient quarterly report process. In addition, the dashboard has provided a method of viewing all indicators in one user-friendly application. Managers and directors are accountable for the indicators that they “own” and can provide comments on the indicator trends within RAD for others to view. The commenting feature enables a central location for information sharing, discussion and review of commentary for best practice. Description: RAD draws data from several sources and delivers more than 70 of the hospital’s indicators via an intuitive web-based interface. Information is displayed by the hospital’s strategic directions, by measure type, or by owner/accountability. RAD also allows for drill down of indicators into corporate, program and unit level trends. Each indicator is assigned a target and threshold that enables a quick view of performance that is red (off target), yellow (within a tolerance range of the target), or green (on target). Observation/Discussion: Feedback has indicated that the new quarterly report process allowed for staff engagement and facilitated continuous improvement. The ease of implementation was attributed to several factors including: a user-friendly platform, pre-implementation planning and the development of key in-house experts that provide training and ongoing support. Conclusions: RAD is a sustainable web-based performance measurement tool that enables effective monitoring and reporting of our hospital’s indicators thereby promoting best practice. We now have enhanced potential to improve patient outcomes through up-to-date, accessible information.
ABSTRACT ID: 81

POSTER PRESENTATION

IMPROVED ACCESS TO CARDIAC REHABILITATION: A COORDINATED HOME BASED APPROACH

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PURPOSE: To improve access to cardiac rehabilitation (CR) through development of a home based model and a coordinated approach to services. RELEVANCE: This project demonstrates a unique initiative to improve patient access to cardiac rehabilitation that is adaptable to other programs. DESCRIPTION: Our hospital provides advanced cardiac services to a region of 10 hospitals. Recognizing the need to improve access to CR, a working group was formed with representation from each hospital to a) develop a model for home based programming, and b) coordinate access to services. Patients will be referred to a CR site closest to their home for one visit that includes an assessment, goal setting, exercise prescription development, and a one on one exercise session. Scheduled telephone follow ups are arranged to review progress. The deliverables of the project include an improved process for patients to access CR components; a Staff Reference Binder for each facility; and a Participant Workbook. Evidence based principles were utilized, and a review of home based CR practices across Canada were considered. Home based services will begin in December 2006. OBSERVATION/DISCUSSION: There has been keen interest and participation from the partnering hospitals to develop this initiative. Additionally, through the work of this group, one hospital without CR has committed to developing an education only program to support improved access. CONCLUSIONS: A key barrier to participating in CR is distance to a program. Funding for cardiac rehabilitation is limited and large geographical areas exist that do not have a program. Our facility has taken the initiative to develop partnerships that address these issues. The result is improved access to CR services. Considerations for future planning include designated sites to provide leadership in coordinating access to care and exploration of a provincial model of home based cardiac rehabilitation.
MEDICATION RECONCILIATION IN A REHABILITATION/COMPLEX CONTINUING CARE FACILITY

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PURPOSE: To evaluate the role of pharmacists in medication reconciliation. RELEVANCE: A Rehab/Complex Continuing Care setting presents unique opportunities to perform medication reconciliation. DESCRIPTION: Over 95% of our admissions come from acute care facilities. The Admitting Department has made strides to collaborate with referral partners to ensure critical documents related to medication reconciliation are being sent with each admission, including but not limited to: - Up-to-date Medication Administration Record (MAR) - Up-to-date Medication Profile from Pharmacy computer system - Up-to-date warfarin Monitoring Record with complete history of INRs and warfarin doses (since pharmacists prescribe warfarin by medical directive). On admission, pharmacists obtain the best possible medication history (BPMH) by: - reviewing MAR, medication profile, and all pertinent medication related records as well as clinical information in the chart; - interviewing the patient or family to confirm the medication history and obtain further information such as home medications, non-prescription and herbal products; - contacting the community pharmacy or family physician/specialist as required to clarify further questions about the patient’s medications; - writing medication orders with no discrepancies on the physician’s order to be reviewed and co-signed by the physician. Physicians make the final decision whether to accept or modify the orders.

OBSERVATION/DISCUSSION: Pharmacists write new medication orders for 85% of all new admissions in collaboration with physicians. Intentional discrepancies were identified proactively by pharmacists, who alert physicians to assess and make any intentional change if necessary. This process significantly reduces undocumented intentional and unintentional discrepancies. The average medication reconciliation success index was 95%. The service has been well received by nursing and medical staff. CONCLUSIONS: Pharmacists play a critical role in medication reconciliation. It has a positive impact on patient care and patient safety. Commitment from senior management and collaboration of all professionals within the institution and between facilities are key success factors.
ABSTRACT ID: 91

POSTER PRESENTATION

PAIN MANAGEMENT IN THE ADULT NON-COMMUNICATING PATIENT: EXPLORATION OF A NEW PAIN ASSESSMENT TOOL

Chantal Letang, Catherine Morash, and Girlie Hart; Sunnybrook Health Sciences Centre

PURPOSE: 1) To evaluate the ability of the Beahaviorial Rating Pain Scale to identify the presence of pain in adult patients unable to communicate. 2) To increase health care providers' knowledge and satisfaction in assessing and managing pain in this patient population.

RELEVANCE: Patient self-report is the gold standard for assessing pain, however, many hospitalized patients are unable to communicate their pain experiences verbally, in writing or thorough gestures. Very few published studies have been conducted and to date, no standardized tool exists to help health care providers identify, interpret and manage pain in this patient population. DESCRIPTION: A new pain assessment tool for patients who are unable to communicate is currently being implemented and evaluated. The Behavioral Rating Pain Scale (a modified version of the Adult Nonverbal Pain Scale) is a three point pain-rating scheme (mild, moderate, severe) with five-assessment categories (physiologic, restlessness, facial expression, vocalization and muscle tension) to assess patients' responses that are indicative of pain. Implementation of the tool began in January 2006 and will run for a two-year period. Comprehensive staff education sessions were provided prior to implementation of the tool. Chart audits, staff surveys and family surveys were conducted in October 2005, January and July 2006 and are being compared pre/post implementation using descriptive statistics and constant comparative method. Surveys and audits will continue to be conducted every six months for the duration of the study. OBSERVATION/DISCUSSION: Preliminary data suggest inconsistencies in documentation remain problematic. Follow-up education sessions regarding documentation standards were provided in November 2006 to address this issue. Ongoing analysis to determine changes in our pain assessment and management practices continues. CONCLUSION: Data collected over the first year of implementation indicates that the tool has been well received but has yet to impact documentation practices.
OUTCOME MEASUREMENTS IN A COMMUNITY SETTING: EFFECTIVENESS OF OCCUPATIONAL THERAPY SERVICES

Stephens, K*; Hand C.; Dynamic Therapy Solutions Inc

PURPOSE: To efficiently assess the effectiveness of community occupational therapy services.

RELEVANCE: Outcome measurement is a vital part of providing rehabilitation services. In a home care setting limited time and resources and a wide range of client issues require a simple and flexible system of outcome measurement. The common goal of all occupational therapy services is to maximize occupational performance, that is, engagement in meaningful daily activities. This study involved using a single outcome measure, the Canadian Occupational Performance Measure (COPM), to evaluate therapy services.

HYPOTHESIS: Clients will show improvement in performance and satisfaction with performance in meaningful occupations after receiving community occupational therapy services.

SUBJECTS: Approximately 300 adults participated in this study. Participants' diagnoses included general medical, neurological, musculoskeletal, mental health and or palliative conditions. Clients received four to twenty-five individual home visits from an occupational therapist.

METHODS AND MATERIALS: A number of tools were evaluated and the COPM was selected. Participants were assessed using the COPM before and after participating in therapy services. The COPM is a reliable and valid self-report measure of an individual's performance in and satisfaction with daily occupations including self-care, leisure and productive activities.

ANALYSIS: Data were analyzed using descriptive statistics. Further analysis is under way.

RESULTS: Participants reported difficulty in all areas of occupational performance and most frequently in self care. The average improvement in the performance score was 5.6 and the average improvement in the satisfaction score was 6.0. An increase of 2 is clinically significant.

CONCLUSION: The COPM is a useful and efficient tool with which to measure outcomes in a community setting. Participants receiving occupational therapy showed improved performance in and satisfaction with daily activities. The COPM has limited applicability to the palliative population and those with significant dementia; these clients participated with input from family members as possible.
ABSTRACT ID: 93

POSTER PRESENTATION

THE VOICE OF INNER CITY HEALTH CLIENTS: A SATISFACTION SURVEY

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PURPOSE: A client satisfaction survey was developed to meet the unique needs and demographics of an inner city population on an in-patient unit in a tertiary care hospital. This survey is reviewed continually and is used to identify strengths and areas for improvement.

RELEVANCE: Client satisfaction is a quality improvement initiative at many hospitals. The current method of lengthy, mail-in surveys proved to be ineffective in gathering reliable, valid results from an in-patient, inner city health population. This population’s demographics are typically older adults with complex medical, social, and functional needs which limit their ability to complete the mail-in surveys.

DESCRIPTION: A pilot study was conducted to gather information on the clients’ ability to complete the surveys and on their preference of response. Based on the pilot study, a new satisfaction survey was created and implemented on an in-patient unit. This survey would obtain information verbally from the client prior to discharge from the hospital and was designed to accommodate the clients’ education level.

OBSERVATION: The newly created satisfaction survey identifies the clients’ satisfaction level. The survey initiates and drives action plans to improve areas of challenge. For example, action plans have led to the creation of a suggestion box for clients and families, a standardized orientation, and an information package. The issue of a more timely response to call bells has also been addressed.

CONCLUSIONS: The development of a new satisfaction survey has been effective in capturing the voice of an in-patient, inner city health population.
ABSTRACT ID: 15

PODIUM PRESENTATION

CONCEALED ALLOCATION: AN UNDER-REPORTED AND MISUNDERSTOOD COMPONENT OF TRIAL METHODOLOGY IN STROKE REHABILITATION.

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PURPOSE: Several studies have shown that the rigour of randomized designs is greatly reduced without concealed allocation (CA) to groups. CA is maintained using a variety of techniques to ensure the original randomization schedule is followed with all patients. METHODS: We assessed how CA was reported in a random sample of 50 randomized controlled trials (RCTs) of therapeutic interventions of stroke rehabilitation published after the release of the CONSORT guidelines (1996). The RCTs (25 pharmacological and 25 non-pharmacological) were selected from a database of 313 studies. An operational definition of CA was derived a priori, using established criteria. RESULTS: A mechanism to ensure adequacy of CA was reported in only 14 (28%) of trials. Details of CA were not mentioned in 27 (54%) of trials and ambiguously reported in 5 (20%). CONCLUSIONS: Although concealment of group allocation is an important feature of trial design, it is inadequately reported and often confused with randomization and blinding of outcome assessment.
ABSTRACT ID: 22

PODIUM PRESENTATION

PATIENT-REPORTED OUTCOMES: QUALITY INDICATORS OF CARE PLANS FOR JOINT REPLACEMENT

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PURPOSE: To determine if WOMAC pain and function outcomes and patient satisfaction are maintained after the institution of a new standardized care pathway for patients undergoing primary hip or knee replacement (TJA). RELEVANCE: Care pathways have the potential to enhance system efficiencies and increase capacity HYPOTHESIS: Outcomes will be maintained. SUBJECTS: 349 (73%) of those accrued to the evaluation (mean age 69, 222 females) completed 3 month follow-up. METHODS AND MATERIALS: Subjects were recruited to the evaluation pre-surgery completing the WOMAC. Follow-up WOMAC and satisfaction questionnaires were completed 3 months later. Length of stay (LOS) in each care sector was tracked against benchmarks of minimum 50% discharged home with 7 post surgery therapy visits or an inpatient rehab stay of 7 days. The sample of 500 ensured that the 99% confidence interval (CI) of the mean for each of WOMAC pain and function would be within 2 and 5 points respectively of the results of a randomized trial where TJA patients received home-based or inpatient rehabilitation. ANALYSIS: Descriptive statistics were calculated for LOS and patient outcomes. RESULTS: Over 50% were discharged to home rehabilitation. LOS targets were met with the exception of inpatient rehabilitation (40%). Those discharged home had mean pain and physical scores of 82.7 and 78.7% (where high scores are better pain relief and function) and those receiving inpatient rehab had pain and function scores of 78.6 and 72.4%. These values are within our a priori CI for outcome. Approximately, 5% of participants had a medical or surgical complication which is within the rates reported in the literature. 13% reported dissatisfaction with rehabilitation planning and care. CONCLUSIONS: This model of care achieved the goals of increasing the proportion of people discharged home following TJA and decreased rehabilitation LOS with increased system capacity for rehabilitation. The patient outcomes are maintained.
ABSTRACT ID: 24

PODIUM PRESENTATION

DEPRESSION AMONG CANADIANS WITH ARTHRITIS OR RHEUMATISM

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PURPOSE: To compare and contrast depressed and non-depressed individuals with Arthritis or Rheumatism in a large, national Canadian sample. RELEVANCE: Depression among Arthritic individuals is associated with lower quality of life, increased risk of suicide, lower medical compliance and greater reliance on the health care system. Practitioners will be able to use our findings to improve targeting and screening efforts to identify and treat or refer their most vulnerable Arthritic clients. HYPOTHESIS: Depression is correlated with a range of demographic (e.g. gender, age), physical health (e.g. ADL limitations, pain) and psychosocial characteristics (e.g. social support, self-esteem). SUBJECTS: The sample was comprised of 24,511 Canadians who reported they had been diagnosed with arthritis or rheumatism by a health professional. METHODS AND MATERIALS: The nationally representative Canadian Community Health Survey 2000-2001 (CCHS) had a response rate of 84.7%, which resulted in a final sample of 130,880 respondents. Respondents were diagnosed as depressed using a subset of items from the Composite International Diagnostic Interview (CIDI). ANALYSIS: Chi-square tests, independent t-tests and logistic regression analysis were conducted with depression as the outcome. RESULTS: One in 10 Canadians with Arthritis has clinically relevant levels of depression. Depression rates were significantly higher among females, the unmarried, younger, and poorer individuals (p<.01). Individuals in pain, with limitations in ADLs or IADLs, with less social support and with alcohol dependency were vulnerable to depression (p<.01). Less than half of the depressed individuals had consulted a mental health professional and one-third were receiving anti-depressants. One in five depressed Arthritic individuals had been suicidal in the past year. CONCLUSIONS: The majority of depressed arthritic individuals were not receiving treatment for depression. Clients should be screened for depression and suicidal ideation, particularly if they fall into the above identified vulnerable groups.
ABSTRACT ID: 31

PODIUM PRESENTATION

PROMOTING PATIENT-CENTERED CARE THROUGH GOAL SETTING IN SPINAL REHABILITATION

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PURPOSE: Providing patient focussed care is at the forefront of the Spinal Cord Rehabilitation Program (SCRP). The purpose of implementing a goal setting process is to enhance interprofessional collaboration in setting patient identified goals that promote maximum abilities and integration into the community. RELEVANCE: Goal setting is consistent with evolving health care delivery practices and is supported in current literature in rehabilitation. The process enables mutual direction of rehabilitation by the team and patient and promotes patient understanding and active participation in rehabilitation, recognizing the patient as an expert in their care. DESCRIPTION: A consistent process was developed and is applied to all patients. This includes setting patient centered goals, creating participation statements and ranking satisfaction. This process is achieved by educating staff, creating tools to assist patients in identifying goals, and centering communication around patient goals to facilitate interprofessional, collaborative practice. OBSERVATION/DISCUSSION: This process has facilitated a shift from discipline specific to interprofessional, patient centered thinking and practice. Initial staff observations include increased focus and efficiency in team communication, shared recognition of realistic outcomes, and greater patient ability to recognize their role as the expert in the rehabilitation process. CONCLUSIONS: The literature supports goal setting as an important means of enabling patient centered care and participation in rehabilitation. Formal communication and team interaction with patients, centered on their goals, is ongoing throughout their rehabilitation. This enables each patient to realize their role as an expert in their care. The process implemented promotes clear, focussed communication and collaborative practice among the interprofessional team. Future research within the SCRP will focus on the measurement of the success of this delivery model, and determine its potential applicability to other similar settings.
ABSTRACT ID: 33

PODIUM PRESENTATION

THE DEVELOPMENT AND IMPLEMENTATION OF AN E-PATH FOR TOTAL JOINT REPLACEMENTS (TJR) ACROSS THE CARE CONTINUUM

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Purpose:
The presentation will showcase a unique and innovative initiative for integrating a TJR case path into an online documentation system – the E-Path. Standardized case paths now form the foundation of the point of care documentation system for allied and nursing staff in the rehabilitation unit.

Relevance:
In April 2005, the MoHLTC sponsored the Total Joint Network (TJN) in Toronto to move forward with an integrated model of care in order to reduce overall LOS and, in essence, create capacity to ensure that elective joint surgery wait times are significantly reduced. In addition, the project required the implementation of best practices across the continuum.

Description:
In the project, a multidisciplinary expert user group was utilized to liaise with Clinical Informatics to create an online version of the TJN Case Paths. Such complete integration immediately moved the implementation of best practice to the bedside. Nursing and Allied staff document against a prescribed set of best practice interventions.

Observation/Discussion:
In this presentation, the authors will discuss the numerous challenges faced during the development and implementation phase. It was evident that full integration required a common vision and significant commitment from all stakeholders to standardize best practice.

Conclusion:
The implementation of an E-path has resulted in a significant change in the philosophy of care – something not anticipated. The online documentation system shifted from a task oriented system to a patient focused and outcome oriented system that can be used as a template for other patient populations.
ABSTRACT ID: 42

PODIUM PRESENTATION

OPTIMIZING OUTCOMES: THE HUMAN FACTOR IN TRANSITIONING TO INPATIENT REHABILITATION

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PURPOSE: To support a person’s access to the right inpatient rehab unit from acute care, in a timely way using a patient-centred approach. RELEVANCE: The process and tools for a referral to rehab, including the interaction between the patient, the acute care team and the other rehab clinical leaders facilitate a positive transition to rehab and successful outcome. DESCRIPTION: In addition to the use of a Rehab Readiness Assessment Tool (RRAT) and a newly developed rehab admission order set, the Rehab clinical leaders have developed a process for reviewing referrals, making decisions and coordinating care for each rehab patient. The human factor is a key component in the transition to rehab. Rehab clinical leaders meet and assess each patient, discuss his/her goals and explain the rehab program. The outcome can include acceptance to rehab, recommendation to an alternate rehab unit, or recommendations to enable to patient to become ready for rehab. OBSERVATION/DISCUSSION: The use of the RRAT ensures that most referrals to rehab are appropriate and supports the efficient use of the clinical leaders’ time. A face-to-face meeting enhances the clinical leaders’ ability to make decisions incorporating personal and family needs and preferences, and to be flexible between rehab units to support earlier access to rehab. It also improves the patient’s experience of this transition. The referral process supports patients receiving the appropriate intensity of rehab, and likely helps them to reach their goals more quickly and enhances outcomes, as evidenced by the CIHI-NRS results. CONCLUSIONS: The combination of the RRAT and the clinical leader’s interaction with the patient and the team enables the person to get to the right rehab program and maximizes his/her potential. Suggestions for future work include advocacy to balance patient-centred care with the system capacity pressures, and mentoring other rehab staff to be assessors.
MENTORSHIP: MAXIMIZING NEW GRADUATES' POTENTIAL IN COMMUNITY PRACTICE

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PURPOSE: With the shift in the health care environment to increased community care, a growing number of new graduates are being recruited to work in the community. A mentoring program was developed at this organization to support new graduates' professional development in community practice. RELEVANCE: Community practice has unique requirements which include working independently, seeking out support and feedback (often informally), self-directed learning and organizing one's practice. This mentoring program presentation will provide information to other rehabilitation professionals and community organizations about the needs of the new graduate, aspects of mentoring and benefits and challenges of such a program.

DESCRIPTION: The mentoring program began with the recognition of the need to provide more support to new graduates. A formal mentoring matching program was developed which included mentor orientation and training. Information packages were provided to both mentors and mentees. Both completed evaluation forms at the end of the formal mentoring period. In addition, other mentoring opportunities were identified and offered including individual and/or group sessions with clinical training and development specialists.

OBSERVATION/DISCUSSION: Using qualitative evaluation, 93% of respondents indicated an 80% or greater satisfaction rating of this program. Benefits to mentees included improved knowledge, skills and attitudes. Both mentors and mentees demonstrated increased confidence. Group and individual mentoring sessions had both benefits and challenges. CONCLUSIONS: This program has had a positive impact on recruitment and retention at this rehabilitation community organization. New graduates have reported that the mentoring program has been influential in their decision to remain in community practice.
SUCCESSFUL APPLICATION OF A CARDIAC REHABILITATION MODEL IN DIABETES MELLITUS

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PURPOSE/RELEVANCE: Individuals with Type 2 diabetes mellitus (T2DM) have low fitness and elevated risk for cardiovascular disease. Endurance and resistance training improve fitness and glycemic control but physical activity is adopted only sporadically. We felt that development of a formal exercise program patterned after a cardiac rehab model could address this gap. DESCRIPTION: 385 men and women (mean age 56, 56% women) were included in this analysis. After an initial cardiopulmonary exercise assessment, subjects were prescribed walking 3-5 days/week at 50-85% heart rate reserve for 20-60 minutes per session plus resistance training. Fasting blood glucose (FBG), hemoglobin A1C, LDL HDL, VO2peak and body composition (BMI, % body fat (BF), waist circumference) were measured pre- and post-six months training. Changes were examined with Student’s paired t-tests and ANOVA. Data are presented as means ± s.d. OBSERVATION: Average walking increased from 1.1 miles/22 mins at baseline to 2.2 miles/39 mins at 6 mos. Following training, fitness improved (pre: 18.1 ± 0.4 ml·kg⁻¹·min⁻¹; post: 20.5 ± 0.6 ml·kg⁻¹·min⁻¹; p < 0.001). BMI, %BF, and waist improved (BMI: pre: 32.0 ± 6 kg/m²; post: 31.6 ± 6; p < 0.001; %BF: 35.6 ± 9.7; post: 34.4 ± 9.9; p < 0.001; Waist: pre: 103 ± 1.3 cm; post: 101 ± 1.3 cm; p < 0.001). LDL fell (pre: 2.84 ± 1.04; 3 mos: 2.57 ± 0.79; 6 mos: 2.47 ± 0.78; p=0.03), whereas HDL remained high (pre: 1.20 ± 0.35; post: 1.31 ± 0.39; p=N.S.). FBG and A1C improved (FBG: pre: 8.1 mmol/l ± 3.0; 3 mos: 7.4 ± 2.0; post: 7.0 ± 1.8; p=0.02; A1C: pre: 7.3 ± 1.5; 3 mos: 6.8 ± 1.3; post: 6.6 ± 0.8 ; p = 0.002). Changes were consistent with literature reports. CONCLUSION: A structured exercise program patterned after a cardiac rehab model is effective in DM.
QUALITY IMPROVEMENT USING RESIDENT ASSESSMENT INSTRUMENT: PHASE I: PROCESS STANDARDIZATION

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PURPOSE: To standardize interdisciplinary data entry process for Resident Assessment Instrument (RAI) in complex continuing care (CCC). To standardize reporting and dissemination of quality indicators to the care team. To utilize RAI, an evidence based instrument for quality improvement. RELEVANCE: RAI is an assessment mandated by the Government for CCC clients. Accurate data is critical to produce valid and reliable reports which support the care team in decision making. Clear identification of accountability and a standardized process ensure consistency and accuracy of data entry. A standardized process to prepare/review quality indicator reports enables planning of quality improvement. DESCRIPTION: Existing client assessment processes which included the generation of assessment schedules, data entry, documentation practices, reporting and dissemination of quality indicators were reviewed. A survey of interdisciplinary assessors was conducted and a quality improvement process was initiated based on the results of the review and the survey. Three areas of improvement were identified: technology, practice and process. The outcomes included standardization of assessment process, automated generation of assessment schedules, designation of quality indicators performance leaders, standardized quality reporting and dissemination processes and changes in documentation practice. OBSERVATION/DISCUSSION: Principles of program evaluation and continuous quality improvement were used in the process review while involvement of stakeholders ensured positive outcomes and sustainability of implementation. Results of a pilot study showed improved consistency and accuracy of data entry with improved documentation. This led to an interdisciplinary care enhancement initiative which improved client and caregiver outcomes. CONCLUSIONS: Changes in the RAI process through standardization of assessment and dissemination of quality indicator reports, clarification of accountability of team members and enhanced documentation resulted in accurate measurement of client complexity and quality of care. Team decisions were enhanced by the availability of valid and reliable quality reports. Benchmarking is planned to provide additional information on care team performance.
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PODIUM PRESENTATION

CARDIAC PATIENTS’ PSYCHOSOCIAL NEEDS AND IMPLICATIONS FOR CARDIAC REHAB PROGRAMS AND CACR GUIDELINES

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RESEARCH QUESTION: There are no published studies on the profile of psychosocial difficulties among cardiac rehabilitation patients, and therefore no empirical basis to determine service provision priorities. RELEVANCE: The range and frequency of health, psychological and psychiatric conditions provide a basis for program managers to plan services. SAMPLE: Study sample were referred for psychological assessment by rehabilitation Supervisors when patients failed to meet rehabilitation prescriptions, or had significant distress: 118 patients were referred (87 men and 31 women). DATA COLLECTION AND ANALYSIS: Each file was reviewed for health diagnoses, chief complaints and psychiatric diagnosis. FINDINGS: Health diagnoses: 90% had a cardiac event as a primary diagnosis. Co-morbid chronic conditions included stroke (23%), diabetes (19%), and psychiatric history (15%); 15% with co-morbid acute angina. Psychological presentation: Anxiety, depression, interpersonal problems and sleep accounted for 86% of primary presentations. Combined primary and secondary presentations totals were: stress, anger and anxiety (43%), family and relationship problems (40%), depression (36%), chronic stress (25%), sleep problems (20%), behaviour and lifestyle concerns (9%), and smoking or substances (6%). Psychiatric diagnoses: Frequencies of psychiatric diagnoses: Depression (34%), Anxiety (33%), Sleep (19%), Adjustment disorder (14%); 4% no diagnosis. 22% referred for psychiatric co-management. 50% reported persistent psychosocial stressors (dysfunctional marriages, problems with adult children, conflictual family relationships, work stress). DISCUSSION: Implications for Best Practices: 1) Routinely screen for chronic co-morbid illnesses, depression, anxiety, and sleep disorders 2) A third of patients, diagnosed with Adjustment or Sleep Disorder, can best be treated by targeting specific treatment needs in a group format, focusing on stress reduction and self-management of chronic health problems, 3) High prevalence of interpersonal conflicts suggests that psychosocial factors are pervasive and important to the broader task of helping patients rehabilitate from their medical condition. Limitations are reviewed, and implications for the Canadian Association of Cardiac Rehabilitation Guidelines will be discussed.
PODIUM PRESENTATION

RESULTS OF THE COMMUNITY BASED DEVELOPMENTAL TEAM (CBDT) DEMONSTRATION PROJECT

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PURPOSE: To develop/evaluate two community based, family centred, interdisciplinary, developmental diagnostic teams for preschool children identified with complex developmental disorders; to enhance integration of services within existing community services; to implement a "best practices" service model based on the Regional Preschool Child Development Model; and to establish a network of community based developmental services for children in collaboration with Regional Children's Health Centres (RCHC). Teams funded by the PHCTF from January 2004 to September 2006. RELEVANCE: Project facilitated growth, coordination and integration of the child development system across the GTA and is assisting in the development and adoption of a comprehensive model of child development services. Based on the number of referrals received, there is a quantifiable sense of the demand for child development services within targeted communities. DESCRIPTION: Using a Logic Model, the CBDTs employed both process and outcome evaluation methods. A database was developed to collect information regarding workload, utilization, diagnosis, referral patterns and referral to community resources. Used standardized survey tools (MPOC-20 and Impact on Family Scale) to obtain family feedback prior to assessment and/or after follow up. Developed and used feedback questionnaires to obtain feedback from community providers and referral sources. OBSERVATION / DISCUSSION: Results support the need for CBDTs within targeted communities. Teams received 52% more referrals than the clinics' capacity. MPOC-20 results exceeded CanChild performance targets. Impact on Family Scal results suggest that families experience high levels of stress particularly in areas of financial and mastery domains. There was a statistically significant reduction in financial stress/burden post follow-up appointment. Community providers and referral sources commented that the CBDTs improved the continuum of care and agreed 9100%) that the clinics should be a permanent service. CONCLUSION: Partnership was an effective collaboration. Bloorview Kids Rehab received short term funding to operate teams as satellites of Bloorview.
ABSTRACT ID: 67

PODIUM PRESENTATION

PATIENT PARTICIPATION IN REHABILITATION TREATMENTS: AN OVERVIEW AND SYSTEMATIC REVIEW

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RESEARCH QUESTION: What strategies have been developed to quantify patient participation in rehabilitation programs? Have clinical tools been created to measure these strategies and subsequently validated? RELEVANCE: Active patient participation is an integral value of rehabilitation interventions. Therefore, insufficient participation by patients could be an important factor influencing treatment outcomes in both clinical research and practice. In order to determine the effects of patient participation we need validated tools that quantify this construct. SAMPLE: Major electronic databases were reviewed using predetermined search headings related to patient participation and rehabilitation. Pertinent articles were identified by title and abstract review. Additional articles were identified by reviewing the bibliographies and citations of relevant articles. DATA COLLECTION AND ANALYSES: Articles describing trends in the quantification of patient participation in rehabilitation were summarized to provide an overview of the current state of the literature. Articles on original research of the validity of clinical tools underwent a structured review addressing the study’s design, treatment setting, population, data collection procedures and analysis. FINDINGS: Three main strategies have been used to quantify patient participation: attendance at scheduled appointments, participation during treatment and home exercise completion. Within each one of these strategies, standardized clinical measures have been created and assessed for validity and reliability. In many cases, however, tool development occurred in a narrowly-defined population, limiting the generalizability of these findings. DISCUSSION: Tools to measure various components of patient participation in rehabilitation are available in the literature. The effective use of these tools could help researchers and clinicians to better understand factors determining patient participation and the effects of participation upon outcome. More research is needed to assess the applicability of these tools across patient populations and treatment settings.
PODIUM PRESENTATION

HOPES AND EXPECTATIONS: THE FOUNDATION OF MUTUAL GOAL SETTING

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PURPOSE: To enhance family centred care by providing families with a mechanism for identifying their "hopes/expectation" and actively participate in their child's care plan; to increase integration of Family Team Goal Plan (FTGP) with other care processes; to enhance interdisciplinary collaboration; to implement a goal planning process reflective of CCHSA standards. RELEVANCE: Collaborating / partnering with clients/families to set mutual treatment goals is an important way to demonstrate organizational commitment to family centred care and to ensure services meet the needs of clients/families. This initiative provided an opportunity to enhance interdisciplinary teamwork and collaboration and thus provide better coordinated care.

DESCRIPTION: Established FTGP Committee to guide development, implementation and evaluation of FTGP; developed and ran FTGP Staff Education Workshops; developed an evaluation framework that included pre and post chart audits, family and staff surveys and staff focus groups. OBSERVATIONS: 93% of families reported satisfaction with FTGP process. 93% of audited charts had FTGP with documented "hopes/expectations" within 2 weeks of admission. Ongoing work required to ensure goals are SMART and interdisciplinary. Ongoing work required to ensure families receive copy of FTGP in timely manner. Staff reported that time constraints both during Rounds and throughout the work day affected ability to collaborate with colleagues to develop interdisciplinary goals.

CONCLUSION: Families and staff agreed that the FTGP process provided a structured mechanism for engaging clients/families in mutual goal setting. Need to ensure that interdisciplinary goal setting is an integral component of the care process and that time is available for engaging in this activity. Initiative represented a practice shift from discipline specific to interdisciplinary goal setting. Mentoring/coaching and communication are essential elements to facilitate consistent implementation and sustainability of FTGP process. Leadership is key to ensuring consistent implementation of FTGP process.
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PODIUM PRESENTATION

ORTHOTIC MANAGEMENT OF THUMB CARPOMETACARPAL OSTEOARTHRITIS: LESS IS MORE

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PURPOSE: To compare the efficacy of two custom-molded hand-based thermoplastic orthoses (splints) to relieve pain, improve strength and enable hand function of individuals with thumb carpometacarpal osteoarthritis (thumb CMC-OA).

RELEVANCE: Thumb CMC-OA affects approximately 1/3 of women between 40 and 75 years, causing joint laxity, subluxation, pain and functional impairment. Although occupational therapists frequently provide orthoses for clients with thumb CMC-OA, the most effective orthotic design is debatable. The challenge is to provide a comfortable fit and joint stabilization, without unnecessarily restricting mobility.

HYPOTHESIS: Individuals with thumb CMC-OA will have reduced pain and improved hand function with a custom-made orthosis that stabilizes the thumb CMC joint, without restricting the metacarpophalangeal (MCP) joint.

SUBJECTS: Twenty subjects between 30 and 75 years, with CMC-OA and MCP hyperextension less than 20°. Nine subjects were fitted with the orthosis that stabilized only the CMC; 11 subjects were fitted with the design that additionally immobilized the MCP.

METHODS AND MATERIALS: A multi-centre, pre- vs. post-test design compared two groups at baseline and follow-up at 4 weeks after provision of a custom orthosis. Outcome measures included Patient-Rated Wrist/Hand Evaluation, lateral pinch strength and grip strength. The data was analyzed using single-factor repeated measures analysis of variance.

RESULTS: A significant reduction in pain and a significant improvement in function were found for both orthoses. Lateral pinch strength improved significantly with both orthotic designs.

CONCLUSION: Both orthoses significantly reduced pain, and improved function and lateral pinch strength, with no evidence to show a significant difference between the two orthotic designs. When there is minimal pathology of the thumb MCP joint, it is unnecessary and undesirable to immobilize the MCP joint and the CMC-stabilizing orthosis is recommended. Additional case studies show that post-study modifications to the CMC-stabilizing orthotic design (utilizing neoprene combined with thermoplastic), achieved enhanced comfort and usability.
ABSTRACT ID: 88

PODIUM PRESENTATION

ELECTRONIC STROKE REHABILITATION REFERRAL IMPLEMENTATION: UNDERSTANDING THE HUMAN FACTORS TO MAXIMIZE STROKE RECOVERY

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PURPOSE: To evaluate the benefits and challenges of implementation of an Internet-based electronic Referral system for Stroke Rehabilitation compared to a traditional paper based system. RELEVANCE: Increasing evidence suggests that earlier onset stroke rehabilitation results in better ultimate recovery. It is therefore critical to understand the health system barriers to efficient access to rehabilitation. DESCRIPTION: The Stroke Coordinated Referral Initiative Pilot (SCRIPT) project developed a number of innovations to enhance the rehabilitation referral process including: Standardized outcome measures, a triage tool, a client transition information guide, and an electronic transmission process. The electronic database includes system indicators such as wait times, lengths of stay and response rates. OBSERVATIONS: There are number of human elements to implementation and system sustainability that must be considered including development of consensus as to referral outcome measures, common definitions of readiness for rehabilitation, sustaining trust in the quality of the information and ongoing training of staff in the evidence based measures. With the implementation of the Electronic Stroke (E-Stroke) Referral system, results include: increased numbers of referrals accepted on the first attempt, reductions in time to response to referrals to less than 24 hours and increased provider satisfaction. Using the database, every participating organization is provided with a report of their performance relative to all others in their category of hospital. This has allowed organizations to identify areas to enhance their processes. The system has also pointed to other discrepancies in performance such as the shorter length of stay and reduced time from stroke onset to rehab referral in the regional stroke centers. CONCLUSION: Human factors remain important in the sustainability of the E-Stroke Rehabilitation Referral System. The implementation of the system has resulted in decreased time to responses from intake teams, increased acceptance rate on first referral and decrease in non-responses. This system promotes best practices in referral.