

Instructional Course Lectures

Thursday, October 11

IC01: ADDRESSING THE COMPLEX NEEDS OF INFANTS AND TODDLERS WITH CEREBRAL PALSY AND THEIR CAREGIVERS: A GROUP-BASED INTERDISCIPLINARY EARLY INTERVENTION MODEL

Claire Morress, PhD, OTR/L, ATP; Amanda Wizinsky, PT, DPT, PCS; Elizabeth Willig-Kroner, MA, CCC, SLP; Hillary Prather, MSW, LISW-S

Early learning is motor based, relying on active self-initiated environmental exploration. Because children with CP reach 90% of their motor potential by 5 years, with the most significant potential for change within the first two years, providing early intervention that focuses on motor skill development and exploration is imperative. The Perlman Center at Cincinnati Children's developed an EI model applying the principles of GAME, and other evidence-based, intensive task-oriented approaches to early learning. This course will review the current evidence supporting 'what works' for infants and young children with CP, describe the format of a group-based, interdisciplinary EI program, and present practical CP specific strategies for integrating OT, PT and speech therapies. We will discuss how this clinic-based model relies heavily on parent-initiated home carry over, and present strategies for maximizing understanding of the home environment through shared goal-setting and a routines-based assessment. The role of care coordination, parent coaching and parent-to-parent support to optimize parent engagement and self-management will be presented. The advantages and challenges of employing an interdisciplinary model and specific strategies for developing an integrated plan of care will be discussed. Videos and case examples will highlight key components of the therapy model, including episodic care, goal-directed task-specific interventions, child active approaches, parent coaching, environmental enrichment, and use of technologies to promote early exploration. Ideas for program assessment and preliminary program outcomes will be presented.

IC02: ADVANCED TECHNOLOGY IN EARLY INTERVENTION: ASSESSMENT AND INTEGRATION

Bernadette Gillick, PhD; Cole Galloway, PhD, PT; Thubi H. A. Kolobe, PT, PhD; Barbara Sargent, PhD, PT, PCS

We will present recent research and clinical technologies, designed to support the independent exploration of infants and toddlers with motor impairments. Integration of neuromodulation, in the form of non-invasive brain stimulation, can both assess integrity of the developing brain and also optimize cortical excitability required for movement during rehabilitation therapies. Use of robotic technology equipped with unique sensors able to augment an infant's self-initiated movement, such as the self-initiated prone progressive crawler (SIPPC), provide reinforcement and error-based movement learning crucial for early independent prone mobility. In-home harness systems provide body-weight support as infants independently explore their environment and their motor capabilities using their own error correction and problem solving strategies.



GoBabyGo, a national community-based research, design and outreach program, provides modified ride-on cars to infants and toddlers with limited mobility with customizable steering and driving systems to promote independent mobility and address individualized goals. Child-activated toys are used to identify abilities, and reinforce specific movement patterns, encourage more complex exploration, and/or motivate independent mobility. Attendees will engage in discussion regarding opportunities and challenges of technology in early intervention and potential strategies to optimize success: (1) developing technology, obtaining funding, and interdisciplinary collaboration (2) determining thresholds for learning, optimal dosing, and appropriate measures to document change; and (3) translating technology from research to clinical practice. The symposium will conclude with an entertaining 'pop-quiz' and summary of take-home research and clinical translation messages in the field of technology in early intervention.

IC03: ASSESSMENT AND TREATMENT OF ADULT PATIENTS WITH CEREBRAL PALSY AND COMORBID DEPRESSION

Daniel Linhares, MD; Hiroko Matsumoto, MA, PhD

Cerebral palsy (CP) is a common disability, with prevalence ranging from 2-3 per 1000 live births. Increasing numbers of these patients are surviving into adulthood, with more than 500,000 adults in the US alone. Our research at the Weinberg Family Cerebral Palsy Center (Columbia University Medical Center) identified that a significant proportion of adult patients had documented depressive symptoms in their clinical charts. This course will present the results of our research, including the prevalence of depression in adult patients with CP treated at our institution. We also identified possible risk factors associated with depression and commonly used psychotropic medications in this population. Additionally, we will discuss the potential advantages and disadvantages of different antidepressant medications, and how to tailor these medications to address specific psychiatric symptoms. Finally, we will discuss the use of various validated screening tools to identify depression in the medical setting.

IC04: EARLY DIAGNOSIS OF CEREBRAL PALSY IN THE US: TRANSLATING OF THE 2017 INTERNATIONAL GUIDELINES INTO CLINICAL PRACTICE

Rachel Byrne, BA of Physical Therapy, BA Exercise Science; Nathalie Maitre, MD, PhD; Andrea Duncan, MD, MS

Presenters will provide a brief overview of the guidelines, key building blocks and basics of implementation science necessary for successful implementation. Data and examples of varied yet successful process flows from a two-year project will be presented with facilitated group discussion of common barriers and solutions. Using provided materials (building blocks of the guidelines and a standard flow chart), participants will create a diagram representing pathways to diagnosis, counseling and referral to interventions. Strategies for performing a strengths, weaknesses, opportunities, and threats (SWOT) analysis for the guidelines, as a first step in practice change in a large-group setting will be presented. Working in facilitated small groups of 6-7, participants will complete a targeted SWOT matrix in their current practice. The workshop will conclude



with a question/answer session and discussion of program evaluation techniques as well as internet resources for knowledge translation and for evidence-based early interventions for CP.

IC05: FIXING THE FEMURS, FIBRES AND FEET: IMPACT ON FITNESS, FUNCTION, FRIENDSHIPS AND THE FUTURE

Pamela Thomason, B Physio, M Physio; Kate Willoughby, BPhysio, DPhysio; Tandy Hastings-Ison, PhD, BAppSci(Physio); Abhay Khot, FRACS; Kerr Graham, MD, FRCS (Ed), FRACS

This course will focus on musculoskeletal health issues in children, adolescents and young adults with CP. The ICF framework has been used to inform our thinking about interventions and outcome measurement. As a multidisciplinary orthopaedic clinical team we have focused assessment, management and research on body structure/function and activity domains of the ICF. More recently, the addition of the “f-words” concept¹ has changed our thinking. In this course we will challenge participants to think about outcomes from the perspective of the “f-words” within the context of the individual and their family. Long term outcomes of the hip, spine, and lower limb musculoskeletal management will be discussed. The influence of musculoskeletal deformities on pain, function, activity and participation with the “f-word” framework will be a focus. The course will be evidence-based, drawing on data from population-based studies of hip health and spinal deformity at skeletal maturity, and the outcomes of Single Event Multilevel Surgery (SEMLS) after 10 years. Two key studies published on long-term gait outcomes after SEMLS² and distal femoral extension osteotomy/patellar tendon advancement (DFEO & PTA)³ will be compared.

Interactive cases will be presented using “f-word” profiles to illustrate musculoskeletal issues in the context of the individual's “f-words” goals, with time to discuss management strategies and outcomes.

IC06: INCORPORATING RESISTANCE TRAINING INTO EPISODIC CARE IMPROVES FUNCTION AND PARTICIPATION IN YOUTH WITH CEREBRAL PALSY

James B. Hedgecock, PT, DPT, PCS; Nicole Harris, PT, PCS, BOCO

Functional independence in youth with CP is expected to plateau after the age of 7-8 years while participating in standard treatment dosing of weekly therapy. Strength impairments in youth with CP are an important factor impacting function, and the conventional therapeutic approach does not provide appropriate stimulus to increase strength for improved function. Recent evidence has shown that power-based strengthening results in improved strength, function and participation. A new service delivery model targeting individualized patient goals and incorporating appropriately dosed resistance training and intensive functional skill practice into brief episodes of care will be discussed. Evidence about the importance of strength for functional independence in youth with CP, the use of resistance training as an intervention in this population, and appropriate dosing using current training recommendations will be reviewed. The process of implementing a new program across a large, pediatric system will be discussed including clinician training, systematic use of outcome measures, and transitioning patients to episodic models of care.



Aggregated patient outcomes will be presented demonstrating improvements in impairment, function and participation. Case studies and family testimonials will also be presented.

IC07: 7 EFFECTIVE HABITS FOR HIP HEALTH

Ginny Paleg, PT, DScPT – PT; Elisabet Rodby-Bousquet, PhD; M. Wade Shrader, MD; M. Shrader, Bachelor of Arts

Hip dislocation in children with cerebral palsy (CP) often occurs at an early age, and is associated with pain, contractures and deformities such as windswept hip deformity, and scoliosis. Without preventive treatment hip dislocation affects 15-20% of all children with CP. However early interventions and active surveillance can reduce the number of dislocated hips and pain. This session will present seven steps to improve overall hip health in children with CP.

1. Salient surveillance (following Early Identification of Risk)
 2. Crush contractures
 3. Symmetry During Sleep
 4. Standing in Abduction
 5. Two Hours of Daily Activity
 6. Family Focused and Fun
 7. Pain Prevention and Management
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IC08: DEVELOPING CARE COORDINATION PROGRAM-CEREBRAL PALSY

Margaret L. Salzbrenner Hoopes, MSN, CPNP-AC; Kirk Dabney, M.D.; Laura Owens, MD; Nancy Lennon, DPT

This instructional course will describe the evolution of care coordination at a large cerebral palsy center in a regional children's health specialty network. The presentation will include a review of the evidence supporting the utility of care coordination and its advantages for youth with severe motor impairment and medical co-morbidities. Strategies to prepare for 'Value Based Medicine' models will be reviewed and discussed with attendees. Presenters will share results of programmatic initiatives and solicit discussion of others experiences with different care delivery methods regarding barriers, planning, and successes.

IC09: LONG-TERM DEVELOPMENT AND EARLY PREDICTORS OF PARTICIPATION OF ADULTS WITH CP IN DOMESTIC LIFE AND INTERPERSONAL RELATIONSHIPS: IMPLEMENTATION USING CO-CREATION

Marloes van Gorp, MSc; Jeanine Voorman, MD, PhD; Johannes Verheijden; Marij Roebroek, PhD



This instructional course will present and discuss new results of the 13y long-term follow-up cohort study PERRIN DECADE (part of the PERRIN program; Pediatric Rehabilitation Research in the Netherlands). Development and early predictors of participation of individuals with CP growing into their mid and late twenties were studied, with a focus on participation in domestic life and interpersonal relationships of individuals with CP without ID. In this instructional course we aim to identify in co-creation with rehabilitation professionals and persons with CP how we can implement development curves and early predictors to optimize participation of individuals with CP.

IC10: NEURO-ORTHOPAEDIC JOURNAL CLUB: TOP 10 ARTICLES IN THE LAST YEAR RELATING TO THE ORTHOPAEDIC MANAGEMENT OF CHILDREN WITH NEUROMUSCULAR DISORDERS

Amanda T. Whitaker, MD; Jon R. Davids, MD; Benjamin J. Shore, MD, MPH, FRCSC

This course will present a journal club style review and analysis of the last year's most significant scientific articles relating to the orthopaedic management of children with neuromuscular disorders. Articles will be reviewed following a standardized format, with each review followed by a period of open discussion concerning the contribution of the article to the body of knowledge and its potential impact on clinical practice.

IC11: PERSISTENT TOE WALKING: CURRENT APPROACH TO EVALUATION AND TREATMENT

Katherine Haynes, PA; Mauricio R. Delgado, MD; Lane Wimberly, MD

Through a series of interactive lectures and brief case discussions, we will review the evaluation of patients with PTW. We will review the signs and clinical symptoms that raise suspicion for a neurologic origin and will discuss the common neurologic diagnoses often discovered when treating these patients. Finally, we will review the treatment, including non-operative and operative options, and the risks and benefits of each. Workshop attendees will participate in case discussions where suspected diagnosis, appropriate workup, and appropriate treatment intervention will all be deliberated. A focus of the course will include a discussion on the potential underlying neurological etiologies identified within the PTW population and the importance of identifying these before pursuing any particular treatment approach.

IC12: START-PLAY: JOINTLY ADVANCING MOTOR AND COGNITIVE DEVELOPMENT IN INFANTS WITH MOTOR DELAYS

Regina Harbourne, PhD; Stacey Dusing, PhD; Michele Lobo, PT, PhD; Sally McCoy, PhD

Clinicians will be able to update their practice as they learn about the most current findings in motor learning and about cognitive development interactions with the movement system, specifically with infants under 2 years of age. The course will include lecture, updated research on effective practices in PT for infants with neuromotor dysfunction or delays, delineation of cognitive and perceptual changes that occur with motor



change, and problem solving through case studies of infants with a variety of limitations. Video analysis of both movement and cognitive/perceptual strategies will help the participating therapists to expand their intervention skills, specifically for advancing the emergence of perceptual motor skills.

IC13: THE RIGHT TO EAT: CAN TRAINING CAREGIVERS IMPROVE PARTICIPATION IN FEEDING FOR CHILDREN WITH CEREBRAL PALSY?

Gina Rempel, MD, FRCPC; Cynthia Brown. Dodds, PT, PhD; Marianne E. Gellert-Jones, MA, CCC-SLP; Barb Borton, BMR (OT), MSc

Eating is a life-enriching experience that many children with CP do not participate in because of fear of negative outcomes.

This session will review the quality of life and ethics of participation in eating, discuss the elements of risk and how to evaluate them, and review how safety factors can be incorporated into feeding plans. The evidence that caregiver training has a positive impact on feeding safety will be a major focus.

Using a case-based approach presenters will then use the International Classification of Functioning, Disability and Health Framework (ICF) to discuss the development of safe feeding plans that foster participation in eating for children with a variety of feeding and swallowing skills, including Eating and Drinking Ability Classification System (EDACS) levels 4 and 5. Essential elements in training caregivers will be presented, so that feeding in community care settings where the children are not fed by their parents can be explored. Participants will be able to engage in this interactive session to prioritize which training elements take on special significance in their own practices and how to encourage others to foster participation in feeding when risks need to be balanced with the right to participate.

IC14: TRANSFORMING THE RESEARCH JOURNEY THROUGH STAKEHOLDER ENGAGEMENT

Keiko Shikako-Thomas, PhD; Annette Majnemer, OT, PhD

The course will offer stakeholder engagement strategies developed by the CHILD-BRIGHT Network, a Strategic Patient-Oriented Research Network that aims to improve life outcomes for children with brain-based developmental disabilities and their families. The presenters will share their experiences in partnering with patient-partners and how these strategies contribute to the cultural shift toward patient-oriented research in the Canadian context. They will discuss the organizational structures that support meaningful partnerships at different hierarchical levels of the Network (i.e. patient-partners in research teams, CHILD-BRIGHT Program committees, Citizen Engagement Council). Course attendees will explore CHILD-BRIGHT's four levels of engagement, and how the network intends on evaluating the impact of stakeholder engagement. This course is relevant to AACPDM attendees that wish to develop research projects and transform research networks or groups by partnering with patients and other relevant stakeholder groups from the onset of the research process and throughout all phases of research to include knowledge translation strategies.



IC15: ULTRASOUND GUIDED INJECTIONS USING ALCOHOL AND PHENOL IN SPASTICITY MANAGEMENT

David Cancel, MD; Monika Desai, MD; Dara Jones, MD

Ultrasound guided imagery has become widely used in spasticity management. Research has demonstrated the advantages of Ultrasound visualization compared to traditional “blind” injection techniques, resulting in improved patient outcomes. This workshop will provide a background on the use and benefits of Ultrasound guided visualization and the benefits of chemodenervation with Alcohol/Phenol in spasticity management. Attendees will learn techniques for the localization of selected muscles and nerves using Ultrasound guidance. Participants will then practice these techniques to improve their spasticity management practice.

IC16: WHEN LESS IS MORE: A NOVEL INTERVENTION TO PROMOTE SELF-GENERATED POSTURAL CONTROL IN INFANTS AND TODDLERS WITH MOVEMENT DISORDERS

Mary Rahlin, PT, DHS, Board Certified Pediatric Clinical Specialist; Cuyler Romeo, M.O.T., OTR/L, SCFES, CLC

This course will introduce a novel intervention for postural control that can be applied across the developmental continuum in any setting, and specifically, in early intervention. Self-generated postural control can be targeted by a Perception-Action (P-A) Approach intervention shown by research to have global effects on development and observed clinically to enhance spontaneous exploratory activity in infants and toddlers. Principles of this intervention supported by current theories of development will be discussed and illustrated by video cases featuring common scenarios frequently observed by clinicians. Current research evidence in support of P-A Approach will be presented and applied clinically to demonstrate improved infant and toddler participation in individualized meaningful activities. The interactive components of the course will challenge the audience to identify appropriate activity goals for children featured in video cases, apply a novel observation method to the assessment of postural control, and compare and contrast the new approach with traditional intervention strategies.