

### UNIT IV OVERVIEW

In this unit, **Advanced Neurological Physiotherapy Practice**, students continued to expand their knowledge, skills and professional behaviours needed to provide client-centred practice for individuals with various neurological disorders. They continued to gain knowledge and develop skills and behaviours to be effective in interacting with individuals from across the lifespan. The concepts of the International Classification of Function (ICF) (World Health Organization) were used to provide a structure for the development of their clinical reasoning.

The following is an overview of the unit (see the unit objectives for more detail). Within the **Knowledge Objectives**, the focus is on neuroanatomy, neurophysiology, neuroplasticity/pathophysiology, prognosis, motor control and motor learning, the use of standardized measures, and a task oriented approach to treatment. Within the **Skills Objectives**, students' assessment skills will continue to develop. They were introduced to physiotherapy interventions that are focussed on enhancing the quality of life of individuals with acute and chronic neurological disorders. As well, they continued to improve their critical thinking and develop their critical appraisal skills in order to implement evidence-based practice. The **Professional Behaviours Objectives** focus on new ethical dilemmas, the roles of other members of the health care team and emerging roles of the physiotherapist as an advocate and consultant.

The eight week academic component of this unit included Problem Based Tutorials (5 hours per week), Clinical Labs (6 hours per week) and Research and Evidence Based Practice (3 hours per week). There were seven health care problems in the tutorials. The clinical labs provided an opportunity to gain skills related to the tutorial problems. The labs often took place in the clinical setting and usually had volunteers from the community who have been diagnosed with a neurological condition. We hope to provide students with an understanding of the scope of clinical skills appropriate for clients across the lifespan. The focus of the Research and Evidence Based Practice course was to enhance their knowledge of research related to the development of measures. To achieve this goal, large-group sessions will focus on the measurement properties of clinical measurement studies.

### UNIT IV - OBJECTIVES

OBJECTIVES		COURSE COMPONENTS*			
		PBT	CL	REBP	CE
<b><u>KNOWLEDGE</u></b>					
With sufficient depth to manage individuals with neurological disorders, the student will be able to:					
K01	complete the neuroanatomy and neurophysiology objectives as outlined in Clinical Lab Manual	X	X		
K02	describe the pathophysiological mechanisms that accompany common neurological disorders	X	X		X
K03	describe the impact that common neurological disorders have on other systems (musculoskeletal, cardiorespiratory, digestive, skin) and the pathophysiological mechanisms involved	X	X		X
K04	discuss theories related to the neurodevelopmental processes (motor and psychosocial) from birth through senescence	X	X		
K05	describe the following aspects of common neurological disorders encountered in practice: epidemiology, causation, positive and differential diagnosis, natural history, prognosis, burden of illness and interdisciplinary management(including pharmacological)	X	X		X
K06	demonstrate how a model of disablement (Nagi or ICF) provides the conceptual framework for assessment and management of individuals with common neurological disorders	X	X		X

OBJECTIVES		COURSE COMPONENTS*			
		PBT	CL	REBP	CE
K07	discuss current theories that support models of neurological practice including motor learning and motor control, neuroplasticity, neurodevelopment	X			
K08	describe condition specific components of neurological assessment and their application to individual patients	X	X		X
K09	apply principles of differential diagnosis to neurological conditions, with attention to factors that differentiate similar neurological conditions	X	X		X
K10	demonstrate a familiarity with, and an ability to critique a variety of common standardized assessments	X	X	X	X
K11	Identify when a diagnostic test (i.e. MRI, CAT scan) is indicated for a neurological condition, discuss the advantages/differences of each test, and make an evidence based decision on what test is the most appropriate for the condition being studied	X	X		X
K12	describe the principles and objectives of common interventions used by physiotherapists in neurological rehabilitation	X	X		X
K13	Identify medication commonly prescribed for neurological conditions, describe potential drug interactions with medications reviewed in the current and previous terms, and discuss the potential impact these medications might have on the outcome of physiotherapy interventions	X	X		X
K14	demonstrate a knowledge of the significant prognostic variables which influence client outcomes and apply this knowledge when goal setting and therapy planning	X	X		X
K15	critically evaluate assessment for prescription and use of assistive/adaptive devices and equipment for persons with neurological disorders	X	X		X
K16	describe the role of physiotherapy in health promotion, disability prevention and health maintenance	X	X		X
K17	discuss approaches to the maintenance and enhancement of fitness	X			X
K18	describe the impact of neurological conditions on patient's mental wellness	X	X		X
K19	demonstrate an understanding of the principles of client centred practice and how they should be incorporated into neurological practice	X	X		X
K20	Identify different clinical settings in which physiotherapists practice neurological physiotherapy, describe physiotherapists' role in these settings and how these roles are funded (ie. how is the therapist paid, & how does the client pay)	X			X
K21	discuss how health policy influences the delivery of health care to individuals i) with chronic neurological disorders, ii) who are institutionalized, iii) who have cognitive deficits	X			X
K22	discuss the psychometric requirements for diagnostic, predictive, and evaluative measures			X	
K23	discuss the benefits and barriers of implementing the results of clinical measurement studies in clinical practice			X	
<b>SKILLS</b>					
Using the clinical reasoning process the student will:					
S01	determine the range of clients' issues through interview and observation		X		X
S02	perform an assessment, which includes determining the neurological impairments and the impact of the condition on functional activities and participation and develop a clinical impression	X	X		X

OBJECTIVES		COURSE COMPONENTS*			
		PBT	CL	REBP	CE
S03	select and apply appropriate assessment measures (including standardized measures)	X	X	X	X
S04	apply screening and assessment techniques to determine if there is a need for physiotherapy intervention		X		X
S05	determine whether there is a need for referral to other health professionals	X	X		X
S06	develop a list of problems by priority, using the ICF model as a framework	X	X		X
S07	determine evidence-based short and long term prognosis	X	X		X
S08	establish short and long term goals considering prognosis for change in impairment, activity limitation and participation restriction	X	X		X
S09	critically appraise a variety of commonly used measurements, treatment techniques and management programs	X	X	X	X
S10	plan, deliver, monitor, progress and modify treatment effectively	X	X		X
S11	Apply the principles of resistance and cardiovascular training learned in previous units to clients with neurological conditions, in order to create an effective rehabilitation program	X	X		X
S12	evaluate treatment outcomes	X	X		X
S13	plan for client discharge and follow-up	X	X		X
S14	carry out age and condition specific clinical assessment of impairments, functional limitations and disabilities related to the following: a. range of motion b. muscle strength c. spasticity d. coordination e. voluntary/involuntary movements f. postural control g. sensory systems h. gross motor function i. arm and hand function j. physical independence k. mobility and locomotion l. fitness m. quality of life		X		X
S15	consistently demonstrate safe handling, with appropriate body mechanics, when working with a client with a neurological disorder		X		X
S16	demonstrate skill in selecting, performing, progressing and evaluating therapeutic interventions aimed at minimizing impairment, activity limitations and participation restrictions		X		X
S17	demonstrate an ability to recognize and respond appropriately to the cognitive, perceptual and behavioural changes		X		X
S18	demonstrate effective client and family education skills		X		X
S19	communicate (including interview) effectively with clients and their families in order to ensure therapeutic relationships		X		X
S20	demonstrate the ability to apply principles of client-centred practice to the decision-making process	X	X		X
S21	comply with documentation policies of the facility (including workload measurement statistics)				X
S22	design a reliability study			X	
S23	design a cross-sectional validity study			X	

OBJECTIVES		COURSE COMPONENTS*			
		PBT	CL	REBP	CE
S24	design a longitudinal validity study			X	
<b>PROFESSIONAL BEHAVIOURS</b>					
With sufficient depth to manage individuals with neurological disorders, the student will be able to:					
P01	demonstrate an ability to communicate effectively with members of the health care team and coworkers;	X	X	X	X
P02	demonstrate the personal qualities that are required for professional life: a) respect for each individual's uniqueness, b) empathy in client relationships, c) ethical and professional behaviour, d) self-appraisal of personal attributes to build on strengths, and overcome limitations, e) leadership in the profession;	X	X	X	X
P03	demonstrate effective teaching, supervisory, advocate and consultant skills as the need arises;		X		X
P04	demonstrate self-directed learning skills;	X	X	X	X
P05	evaluate self, peers, faculty, preceptors and course in a fair, accurate and timely manner;	X	X	X	X
P06	meet the objectives outlined in the Clinical Performance Instrument (CPI) and Individual Learning Contract;				X
P07	ensure that all Clinical Education material is sent and returned in a timely manner.				X

\* LEGEND:

PBT = Problem-Based Tutorial  
CL = Clinical Laboratories

REBP = Research & Evidence Based Practice  
CE = Clinical Education