



# **Entrustable Professional Activities (EPAs) and Workplace-based Assessment (WPBA)**

in Rehabilitation Medicine  
Residency Training in Thailand

By The Board of Training and Examination in Rehabilitation Medicine  
The Royal College of Psychiatrists of Thailand 2021

**Entrustable Professional Activities (EPAs)**  
and  
**Workplace-based Assessment (WPBA)**  
**in Rehabilitation Medicine**  
**Residency Training**

**2021 Revision**

By

The Board of Training and Examination  
in Rehabilitation Medicine  
The Royal College of Psychiatrists of Thailand



# Foreword

In 2020, the Board of Training and Examination in Rehabilitation Medicine (TERM) under the Royal College of Psychiatrists of Thailand (RCPhysiatrT) published the book entitled “Entrustable Professional Activities (EPAs) and Workplace-based Assessment (WPBA) for Residency Training in Rehabilitation Medicine in Thailand”.

After being used, feedbacks were compiled from staff and trainees of all nine training institutes. Currently, the revised version is now available for implementation for the academic year 2021.

On behalf of the Royal College of Psychiatrists of Thailand, I would like to express my sincere thanks to the EPAs and WPBA working group and the Board of TERM for their time and efforts on revising the book of EPAs and WPBA.

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President, the Royal College of Psychiatrists of Thailand

8<sup>th</sup> July 2021

# Preface

For a year that the EPAs and the WPBA 2000 have been implemented by all training institutes. The EPAs and WPBA Working Group set up a questionnaire aiming to evaluate implementation, success, and feedbacks for further improvement. All WPBA forms have been used extensively and are useful for evaluating the outcomes of all 13 EPAs.

According to the returned questionnaires, the EPAs and WPBA working group looked through all comments and suggestion, brain-stormed and finalized the revised EPAs and WPBA. It has been agreed to maintain all 13 EPAs and WPBAs with some minor changes in contents, one additional WPBA form in critical appraisal, and changing in expected minimum numbers of WPBAs for evaluating residents' achievement in all 6 professional competencies: 1) patient care, 2) medical knowledge and practical skills, 3) interpersonal and communicational skills, 4) practice-based learning and improvement, 5) professionalism, and 6) system-based practice.

For this occasion, I would like to acknowledge the EPAs and WPBA Working Group for devoting their times and efforts in making the EPAs and WPBA in Rehabilitation Medicine Residency Training in Thailand, 2021 revision ready for implementation in 2021 Academic Year.

Assistant Professor Wipawan Leelasamran, MD, FRCPhysiatrT

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8<sup>th</sup> July 2021

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# EPAs in Rehabilitation Medicine

## Residency Training in Thailand

## EPA Table Outline

	Prerequisite	Milestones of Developing Performance and Behaviors			Expected Outcomes & Competencies of a Rehabilitation Physician (Physiatrist) to be able to	
		M1	M 2	M 3	Details	Codes
Basic knowledge	(details)	(details)	(details)	(details)	(details)	(details)
Evaluation & Diagnosis	(details)	(details)	(details)	(details)	(details)	(details)
Rehabilitation & Management	(details)	(details)	(details)	(details)	(details)	(detail)
Workplace-based Assessment (WPBA)		Methods and numbers of cases with <b>“fair performance”</b> to ensure Entrusted Performance <b>Level 4</b> <ul style="list-style-type: none"> <li>▪ <b>mini-CEX</b> mini-Clinical Evaluation Exercise</li> <li>▪ <b>DOPS</b> Direct Observational Professional Skills</li> <li>▪ <b>CbD</b> Case-based Discussion</li> <li>▪ <b>MDR</b> Medical Document Review</li> <li>▪ <b>MSF</b> Multi-Source Feedback</li> <li>▪ <b>RCA</b> Research Critical Appraisal</li> </ul>			Summary of WPBA in a 3-year training program	

Note [Abbreviations and full terms]

## EPA 1: Evaluating and Managing Pain

	Prerequisite	Milestones			Expected Outcomes& Competencies	
		M 1	M2	M 3	Details	Codes
Knowledge	<ul style="list-style-type: none"> <li>Review physiology and pathophysiology of acute and chronic pain, <i>e.g. somatic, visceral, nociceptive, neuropathic pain.</i></li> <li>Review biomechanic and ergonomics.</li> </ul>	<ul style="list-style-type: none"> <li>Describe common causes of MSK pain conditions, <i>e.g. MPS, arthritic pain, tendinopathy including related biomechanics, ergonomics and consequences of MSK pain.</i></li> </ul>	<ul style="list-style-type: none"> <li>Describe neuropathic pain, <i>e.g. radicular pain, central pain, nerve injury, CRPS</i>; consequences and complications of pain.</li> <li>Describe CBT for treatment of pain, and behavior modification.</li> </ul>	<ul style="list-style-type: none"> <li>Describe uncommon/ complex pain conditions, <i>e.g. fibromyalgia, chronic pain, cancer pain, sport injury</i>; consequences and complications; surgical/ anesthetic interventions, and CAM, <i>e.g. acupuncture.</i></li> </ul>	<ul style="list-style-type: none"> <li>Describe different types and causes of pain, related factors (predisposing, perpetuating and precipitating factors), consequences and complications.</li> <li>Describe EBM of pharmacological and non-pharmacological treatments including surgical/ anesthetic interventions, and CAM for pain management.</li> </ul>	MKS1 MKS2
Evaluation & Diagnosis	<ul style="list-style-type: none"> <li>Review pain assessment in MSK pain and imaging, <i>e.g. x-ray, US, CT etc. of MSK conditions.</i></li> </ul>	<ul style="list-style-type: none"> <li>Make a correct diagnosis of common MSK pain.</li> <li>Identify consequences and related factors of MSK pain.</li> </ul>	<ul style="list-style-type: none"> <li>Comprehensively assess bio-psycho-social aspects affecting pain and functioning.</li> <li>Correlate EDx, MRI spine, spinal cord and brain findings for diagnosis of neuropathic pain.</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate complex pain with more specific assessment tools.</li> <li>Correlate imaging, US, bone scan findings for diagnosis of complex pain.</li> </ul>	<ul style="list-style-type: none"> <li>Make a correct diagnosis of cause of pain, and identity related factors, consequences and complications.</li> <li>Select appropriate and safe investigations for proper diagnosis</li> <li>Provide accurate prognosis.</li> </ul>	PC1 PC4 ICS1 ICS2
Rehabilitation & Management	<ul style="list-style-type: none"> <li>Review pharmacological and non-pharmacological management.</li> <li>Review various diagnoses of causes of pain based on ICD-10.</li> <li>Review principles of ethical decision making.</li> </ul>	<ul style="list-style-type: none"> <li>Prescribe appropriate pharmacological and non-pharmacological treatments, <i>e.g. physical modalities, therapeutic exercises.</i></li> <li>Perform trigger point (TrP) injection/dry needling.</li> <li>Provide adequate patient education.</li> </ul>	<ul style="list-style-type: none"> <li>Manage with interdisciplinary and comprehensive approach including CBT and behavioral modification.</li> <li>Provide proper patient education, planning and goal setting.</li> <li>Perform intra-articular/soft tissue injection with/without US-guide with safety precaution.</li> </ul>	<ul style="list-style-type: none"> <li>Perform proper counseling or referral for pain control with other therapy, <i>e.g. epidural/ intra-theal nerve block, CAM</i>, with concern of EBM, safety and cost-effectiveness.</li> <li>Manage based on medical ethical decision making (see WPBA – Cbd).</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate appropriate, comprehensive and interdisciplinary rehabilitation management and counseling based on ethical decision making, safety, and cost-effective.</li> <li>Provide an appropriate referral to other specialists for pain control.</li> </ul>	PC5 PC6 ICS4 ICS6 PF1 PF2 PC3 SBP3
Workplace-based Assessment (WPBA)		<b>mini-CEX:</b> 1 case of MSK pain <b>DOPS:</b> 1 case of dry needling or TrP injection	<b>mini-CEX:</b> 1 case of neuropathic pain <b>DOPS:</b> 1 case for Intra-articular or soft tissue injection	<b>CbD:</b> 1 case of cancer pain, chronic pain, sports injury, or fibromyalgia	<b>Summary of WPBA</b> <ul style="list-style-type: none"> <li><b>mini-CEX:</b> 2 cases</li> <li><b>DOPS:</b> 2 cases</li> <li><b>CbD:</b> 1 case</li> </ul>	

Note: CAM, complementary and alternative medicine; CBT, cognitive behavioral therapy; CRPS, complex regional pain syndrome; CT, computer tomography; EBM, evidence-based medicine; EDx, electrodiagnosis; ICD, International Statistical Classification of Diseases and Related Health Problems; MPS, myofascial pain syndrome; MRI, magnetic resonance imaging; MSK, musculoskeletal; US, ultrasonography

## EPA 2: Evaluating and Managing Brain Disorders

	Prerequisite	Milestones			Expected Outcomes & Competencies	
		M 1	M 2	M 3	Details	Codes
Knowledge	<ul style="list-style-type: none"> <li>Review neuroanatomy, neurophysiology and neuropathology of stroke, TBI, dementia, Parkinson, brain tumor; and risk factors of stroke.</li> </ul>	<ul style="list-style-type: none"> <li>Describe stroke and its consequences, <i>e.g. weakness, impaired sensation, activity limitation</i>, and common complications</li> </ul>	<ul style="list-style-type: none"> <li>Describe spasticity, cognitive impairment, emotional disturbance, dysphagia, dysphasia, incontinence.</li> <li>Describe concept of neuroplasticity.</li> </ul>	<ul style="list-style-type: none"> <li>Describe dementia, Parkinson; cognitive &amp; perceptual dysfunction, behavioral &amp; psychosocial problems; and other consequences, <i>e.g. abnormal movements, gait pattern</i></li> </ul>	<ul style="list-style-type: none"> <li>Describe common brain disorders such as stroke, Parkinson, dementia, TBI; related problems, <i>e.g. impairments, disability, complications</i>; stroke risk factors; and prognostic factors.</li> </ul>	MKS1 MKS2
Evaluation & Diagnosis	<ul style="list-style-type: none"> <li>Review neurological examination and interpretation of NIHSS score.</li> <li>Review ICD-10 and ICF related with brain disorders.</li> </ul>	<ul style="list-style-type: none"> <li>Assess stroke with following measures, <i>e.g. Brunnstrom motor recovery scale, TMSE, Barthel ADL index</i>.</li> <li>Interpret CT and MRI brain findings.</li> </ul>	<ul style="list-style-type: none"> <li>Assess spasticity and dysfunctions with the followings: MAS, MoCA, Rancho Los Amigos scale, PHQ9, MRS, FAC, Gait speed, etc.</li> <li>Screen and assess dysphagia and dysphasia</li> </ul>	<ul style="list-style-type: none"> <li>Assess cognitive, perceptual, behavioral and psychosocial problems.</li> <li>Assess abnormal movements.</li> </ul>	<ul style="list-style-type: none"> <li>Perform special tests to assess severity of related impairments, <i>e.g. NMS, cognitive perceptual, communication dysfunctions</i>.</li> <li>Obtain a complete problem based on ICF framework.</li> <li>Interpret CT and MRI brain findings and provide accurate prognosis.</li> </ul>	PC1 PC2 PC3 PC4
Rehabilitation & Management	<ul style="list-style-type: none"> <li>Review medications for brain disorders and co-morbidity.</li> <li>Review mobility, ADL and concepts of medical rehabilitation.</li> <li>Review non-technical skills, <i>e.g. patient education, ethical decision making, communication skills</i>.</li> </ul>	<ul style="list-style-type: none"> <li>Provide adequate rehabilitation management information to patients and families.</li> <li>Set appropriate short- and long-term goals, follow-up and referral.</li> <li>Prescribe appropriate therapy, orthoses, and mobility aids.</li> <li>Complete medical records.</li> </ul>	<ul style="list-style-type: none"> <li>Make a right decision for further rehabilitation investigation and treatment.</li> <li>Provide adequate information to get informed consent.</li> <li>Perform chemo-neurolysis (See EPA 6 Spasticity).</li> <li>Manage patients with dysphagia, dysphasia</li> </ul>	<ul style="list-style-type: none"> <li>Describe non-invasive brain stimulations (tDCS, TMS), music therapy, etc. appropriately.</li> <li>Manage/make a referral for cognitive and behavioral disturbance, psychosocial problem appropriately.</li> <li>Manage perceptual dysfunctions appropriately.</li> </ul>	<ul style="list-style-type: none"> <li>Set appropriate goals, treatments, and rehabilitation program and counseling.</li> <li>Demonstrate rehabilitation management with an interdisciplinary approach.</li> </ul>	PC5 PC6 ICS1 ICS4 PF2 SBP1
Workplace-based Assessment (WPBA)		<b>mini-CEX:</b> 1 case of uncomplicated stroke <b>MDR:</b> 3 cases	<b>mini-CEX:</b> 1 case of complicated stroke or TBI <b>MDR:</b> 2 cases	<b>CbD:</b> 1 case of dementia or Parkinson	<b>Summary of WPBA</b> <ul style="list-style-type: none"> <li><b>mini-CEX:</b> 2 cases</li> <li><b>CbD:</b> 1 case</li> <li><b>MDR:</b> 5 cases</li> </ul>	

Note: ADL, activities of daily living; CT, computer tomography; FAC, functional ambulatory category; ICD, ICD International Statistical Classification of Diseases and Related Health Problems; ICF, International Classification of Functioning, Disability and Health; MAS, modified Ashworth scale; MoCA, Montreal cognitive assessment; MRI, magnetic resonance imaging; MRS, modified Rankin scale; NMS, neuromusculoskeletal; NIHSS, National Institute of Health Stroke Scale; PHQ9, patient health questionnaire 9; TBI, traumatic brain injury; tDCS, transcranial direct current stimulation; rTMS, repetitive transcranial magnetic stimulation; TMSE, Thai mental state examination

### EPA 3: Evaluating and Managing Traumatic and Non-traumatic Spinal Cord Injury (SCI)

	Prerequisite	Milestones			Expected Outcomes & Competencies	
		M 1	M 2	M 3	Details	Codes
Knowledge	<ul style="list-style-type: none"> <li>Review neuro-anatomy, -physiology and -pathology of TSCI, spine injuries and common NTSCI.</li> </ul>	<ul style="list-style-type: none"> <li>Describe spinal injuries, TSCI, consequence/complications, e.g. weakness, AD, DVT, postural hypotension, PrU, depression, pain (see EPA1).</li> </ul>	<ul style="list-style-type: none"> <li>Describe NTSCI, e.g. NMO, MS; tuberculosis; MMC, tumors, vascular disorders, myelopathy.</li> <li>Describe spasticity, NLUTD and NBoD and related complications.</li> </ul>	<ul style="list-style-type: none"> <li>Describe chronic or complicated problems, e.g. HO, osteoporotic fracture; sexual dysfunction, post-traumatic syringomyelia, suicidal idea.</li> </ul>	<ul style="list-style-type: none"> <li>Describe TSCI and common NTSCI including related consequences and complications in details.</li> </ul>	MKS1 MKS2
Evaluation & Diagnosis	<ul style="list-style-type: none"> <li>Review neurological exam based on ISNCSCI.</li> <li>Review ICF framework, and tools of assessing ADL.</li> </ul>	<ul style="list-style-type: none"> <li>Perform neurological exam based on ISNCSCI.</li> <li>Diagnose secondary conditions in post-acute rehabilitation phase.</li> <li>Identify impairments and disability based on ICF and SCIM-V3.</li> </ul>	<ul style="list-style-type: none"> <li>Assess spasticity, NLUTD and NBoD.</li> <li>Perform single-channel cystometry.</li> <li>Interpret UDT findings correctly.</li> <li>Write cystometry/UDT reports correctly and adequately.</li> </ul>	<ul style="list-style-type: none"> <li>Assess to identify psychosocial problems, QoL, patient/family's needs &amp; expectation, and environmental barriers</li> <li>Identify needs for surgery, advanced therapy &amp; assistive technology.</li> </ul>	<ul style="list-style-type: none"> <li>Make correct diagnoses of TSCI/ NTSCI, and of secondary conditions.</li> <li>Identify rehab problems including psychosocial problems based on ICF, SCIM-V3, QoL, need assessment, etc.</li> <li>Perform cystometry and complete UDT reports with correct findings and appropriate comments/suggestions for management.</li> </ul>	PC1 PC4 PC2
Rehabilitation & Management	<ul style="list-style-type: none"> <li>Review conventional rehabilitation therapy, mobility aid and assistive devices.</li> <li>Review techniques of patient education, &amp; counseling.</li> <li>Review ICD-10 and ICD-9CM.</li> <li>Review legislations on persons with disability.</li> </ul>	<ul style="list-style-type: none"> <li>Set SMART goals &amp; plans for rehabilitation, and provide patient &amp; family education.</li> <li>Make an ethical decision for therapy/treatment, assistive device &amp; mobility aid.</li> <li>Monitor, present and discuss medical and rehabilitation progress of TSCI cases with team at rehabilitation conference (see EPA12).</li> <li>Prevent, early detect, and treat complications.</li> <li>Complete medical record.</li> </ul>	<ul style="list-style-type: none"> <li>Treat spasticity (see EPA6).</li> <li>Manage NLUTD and NBoD appropriately.</li> <li>Monitor, present and discuss medical and rehabilitation progress of NTSCI cases with team at rehabilitation conference (see EPA12).</li> <li>Write appropriate rehabilitation consultation reports and referral letters to other specialists when necessary.</li> </ul>	<ul style="list-style-type: none"> <li>Prescribe high specification assistive devices, mobility aids to increase independency.</li> <li>Co-ordinate with other specialty /organization to solve complicated/ chronic problems.</li> <li>Provide patient &amp; family counseling to enhance disability acceptance and have right coping strategy and attitude, self-efficacy.</li> </ul>	<ul style="list-style-type: none"> <li>Set appropriate goals and plans for patients with TSCI/NTSCI in post-acute &amp; chronic phases.</li> <li>Conduct a holistic interdisciplinary team approach and comprehensive rehabilitation management based ethical decision making (see EPA 12).</li> <li>Provide adequate and appropriate patient &amp; family education and counseling; and assistive devices.</li> <li>Complete correct and complete medical records according to ICD-10 and ICD9-CM.</li> </ul>	PC3 PC5 PC6 ICS1 ICS2 ICS4 ICS6 PF1 PF2 SBP1 SBP3
Workplace-based Assessment (WPBA)		<b>mini-CEX:</b> 1 case of neuro exam in TSCI <b>MDR:</b> 2 cases of IPD/consulted TSCI	<b>DOPS:</b> 1 case of cystometry <b>MDR:</b> 1 case of UDT, 2 cases of IPD/consulted NTSCI	<b>CbD:</b> 1 case of complicated SCI	<b>Summary of WPBA</b> <ul style="list-style-type: none"> <li><b>mini-CEX:</b> 1 case</li> <li><b>DOPS:</b> 1case</li> <li><b>CbD:</b> 1 case</li> <li><b>MDR:</b> 5 cases</li> </ul>	

Note: AD, autonomic dysreflexia; ADL, activities of daily living; DVT, deep vein thrombosis; EBM, evidence-based medicine; HO, heterotopic ossification; ICD, ICD International Statistical Classification of Diseases and Related Health Problems; ICF, international classification of functioning, disability and health; ISNCSCI, International standards neurological classification for SCI; MMC, meningomyelocele; MS, multiple sclerosis; NMO, neuromyelitis optica; NBoD, neurogenic bowel dysfunction; NLUTD, neurogenic lower urinary tract dysfunction; NTSCI, non-traumatic SCI; PrU, pressure ulcer; QoL, quality of life; SCI, spinal cord injury; SCIM-V3, spinal cord independence measure-V3; SMART, specific, measurable, achievable, relevant, timely; TSCI, traumatic SCI; UDT, urodynamic test

## EPA 4: Evaluating and Managing Pediatric Rehabilitation

	Prerequisite	Milestones			Expected Outcomes & Competencies	
		M 1	M 2	M 3	Details	Codes
Knowledge	<ul style="list-style-type: none"> <li>Review normal growth &amp; developmental milestones; primitive reflexes, and postural reactions.</li> </ul>	<ul style="list-style-type: none"> <li>Review pathophysiology of CP and delayed development.</li> </ul>	<ul style="list-style-type: none"> <li>Describe consequences of birth injury - brachial plexus palsy; spina bifida (meningomyelocele); scoliosis, and complicated CP with complications, e.g. hip dislocation, severe spasticity.</li> </ul>	<ul style="list-style-type: none"> <li>Describe NMDs, e.g. congenital limb deficiency, arthrogryposis multiplex congenita; lower limb deformity, rotational deformity; DDH; common genetic disorders; learning disorders and behavioral problems.</li> </ul>	<ul style="list-style-type: none"> <li>Describe growth &amp; developmental milestones, primitive reflexes, postural reactions; and pathophysiology of pediatric diseases/disorders.</li> </ul>	MKS1 MKS2
Evaluation & Diagnosis	<ul style="list-style-type: none"> <li>Review assessment of pediatric diseases/disorders. Pediatric.</li> <li>Review pediatric neurological and orthopedic examination.</li> </ul>	<ul style="list-style-type: none"> <li>Perform primitive reflexes, postural reactions, developmental milestones assessment; pediatric neurological and orthopedic examination to diagnose CP, its consequences and complications.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate clinical reasoning in diagnosis of the above-mentioned diseases/disorders.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate clinical reasoning in diagnosis of the above-mentioned disorders in children.</li> </ul>	<ul style="list-style-type: none"> <li>Perform pediatric diseases/disorders evaluation for correct diagnosis.</li> <li>Identify rehabilitation and related problems including impairments and disability.</li> <li>Select appropriate and safe investigations.</li> <li>Provide accurate prognosis.</li> </ul>	PC1 PC2 PC4
Rehabilitation & Management	<ul style="list-style-type: none"> <li>Review principles of rehabilitation management, goal setting and counseling.</li> <li>Review ICD-10 and ICD-9CM related to CP and other pediatric disease/disorders.</li> <li>Review healthcare and referral system.</li> </ul>	<ul style="list-style-type: none"> <li>Describe impairments, (SMART) goals and rehabilitation program.</li> <li>Provide adequate counseling for parents.</li> <li>Re-assess development milestones, consequences and complications of CP.</li> <li>Complete medical records of pediatric patients with CP.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate clinical reasoning in goal setting and treatment planning of the above-mentioned diseases/disorders.</li> <li>Provide proper management for spasticity (see EPA 6).</li> <li>Write rehabilitation consultation reports and referral letters to other specialists when necessary.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate clinical reasoning in goal setting and treatment planning for the above-mentioned diseases/disorders based on different needs and health insurances.</li> <li>Provide adequate and appropriate patient &amp; parent education and counseling.</li> <li>Prescribe an appropriate assistive device &amp; mobility aid, orthosis (see EPA 9), and prosthesis (see EPA 8).</li> </ul>	<ul style="list-style-type: none"> <li>Set SMART goals and proper rehabilitation management with a holistic interdisciplinary team approach.</li> <li>Provide adequate and appropriate patient &amp; parent education and counseling.</li> <li>Summarize correct and complete a discharge summary and a referral letter.</li> <li>Prescribe an appropriate orthosis, prosthesis, assistive device &amp; mobility aid based on different needs and health insurances.</li> </ul>	PC5 PC6 ICS1 ICS4 ICS6 PF1 PF2 PC3 SBP1 SBP3
Workplace-based Assessment (WPBA)		<b>mini-CEX:</b> 1 case for Hx and PE <b>CbD:</b> 1 common CP case	<b>CbD:</b> 1 complicated CP or NMD case	<b>mini-CEX:</b> 1 case for counseling	<b>Summary of WPBA</b> <ul style="list-style-type: none"> <li><b>mini-CEX:</b> 2 cases</li> <li><b>CbD:</b> 2 cases</li> </ul>	

Note: CP, cerebral palsy; DDH, developmental dysplasia of the hip; Hx, history taking; ICD International Statistical Classification of Diseases and Related Health Problems; NMD, neuromuscular disorders; PE, physical examination; SMART, specific, measurable, achievable, relevant, timely

## EPA 5: Evaluating and Managing Cardiovascular and Pulmonary Rehabilitation

	Prerequisite	Milestones			Expected Outcomes & Competencies	
		M 1 Pulmonary diseases	M 2 Vascular/lymphatic diseases	M 3 Cardiac diseases	Details	Codes
Knowledge	<ul style="list-style-type: none"> <li>Review anatomy and physiology of CVS, lymphatic and pulmonary systems.</li> </ul>	<ul style="list-style-type: none"> <li>Describe pathophysiology of pneumonia, lung abscess, pulmonary TB, restrictive lung &amp; COPD.</li> </ul>	<ul style="list-style-type: none"> <li>Describe pathophysiology of peripheral arterial disease (PAD), DVT, PE; and lymphedema.</li> </ul>	<ul style="list-style-type: none"> <li>Describe pathophysiology of CAD, arrhythmia, heart failure, cardiomyopathy and MI, PCI, CABG.</li> </ul>	<ul style="list-style-type: none"> <li>Describe pathophysiology of common cardiopulmonary diseases, <i>e.g.</i> CAD, COPD.</li> </ul>	MKS1 MKS2
Evaluation & Diagnosis	<ul style="list-style-type: none"> <li>Review peripheral vascular diseases, and tests for DVT, PE and pulmonary disorders; laboratory test and CXR; NYHAFC and ECG.</li> </ul>	<ul style="list-style-type: none"> <li>Diagnose pulmonary diseases with clinical presentation, pulmonary function test, laboratory tests, and CXR.</li> </ul>	<ul style="list-style-type: none"> <li>Diagnose arterial occlusion; venous insufficiency, DVT, PE and lymphedema with non-invasive tests, <i>e.g.</i> ABI, US compression test.</li> </ul>	<ul style="list-style-type: none"> <li>Assess CVS according to NYHAFC, ECG and 6MWT to identify potential candidates and contra-indications to cardiac rehabilitation.</li> <li>Perform and interpret exercise testing before, during, after exercise in patients with cardiovascular and/or pulmonary diseases.</li> </ul>	<ul style="list-style-type: none"> <li>Diagnose cardiovascular &amp; pulmonary diseases and provide accurate prognosis.</li> <li>Prescribe appropriate and non-invasive investigations to confirm diagnosis and assess severity.</li> <li>Identify potential candidates for cardiac rehabilitation program.</li> </ul>	PC1 PC2 PC4
Rehabilitation & Management	<ul style="list-style-type: none"> <li>Review cardiovascular treatments, <i>e.g.</i> cardiovascular drugs, CABG, PCI, and advanced cardiac life support.</li> <li>Review pre- and post-operative pulmonary problems.</li> <li>Review risks factors modification and airway clearance techniques.</li> </ul>	<ul style="list-style-type: none"> <li>Provide patient education for modifying risks of pulmonary disease/disorder.</li> <li>Manage airway clearance techniques, <i>e.g.</i> postural drainage, and breathing based on results of relevant investigations.</li> <li>Prescribe safe endurance exercises for COPD patients.</li> </ul>	<ul style="list-style-type: none"> <li>Prescribe prophylaxis and treatment of DVT, PE and lymphedema.</li> <li>Provide patient education for preventing ulceration and gangrene, and aggravation of lymphedema.</li> <li>Prescribe appropriate physical modalities to control/reduce degree of lymphedema.</li> </ul>	<ul style="list-style-type: none"> <li>Provide counseling and patient education and prescribe safe exercise programs and proper monitoring for patients in different phases of cardiac rehabilitation.</li> <li>Write rehabilitation consultation on exercise prescription and referral letters to other specialists when necessary.</li> </ul>	<ul style="list-style-type: none"> <li>Set appropriate goals</li> <li>Provide proper rehabilitation managements of peripheral vascular diseases, lymphedema, pulmonary and cardiovascular diseases.</li> <li>Provide adequate and appropriate patient &amp; family education and counseling.</li> <li>Complete medical records.</li> <li>Demonstrate concern of safety.</li> </ul>	PC3 PC5 PC6 ICS1 ICS4 ICS6 PF2 SBP1
Workplace-based Assessment (WPBA)		DOPS: 1 case of postural drainage and breathing exercise	CbD: 1 case of lymphatic disease mini-CEX: 1 case of vascular disease	CbD: 1 case of cardiac disease	Summary of WPBA <ul style="list-style-type: none"> <li>mini-CEX: 1 case</li> <li>DOPS: 1 case</li> <li>CbD: 2 cases</li> </ul>	

Note: 6MWT, 6-minute walk test; ABI, ankle brachial index; CAD, coronary artery disease; CABG, coronary artery by-pass graft; COPD, chronic obstructive pulmonary disease; CVS, cardiovascular system; CXR, chest X-ray; DVT, deep vein thrombosis; ECG, electrocardiogram; NYHAFC, the New York Heart Association's functional classification; PCI, percutaneous coronary intervention; PE, pulmonary embolism; US, ultrasonography



## EPA 6: Evaluating and Managing Spasticity

	Prerequisite	Milestones			Expected Outcomes & Competencies	
		M 1	M 2	M 3	Details	Codes
Knowledge	<ul style="list-style-type: none"> <li>Review neurophysiology of muscle tone &amp; pathophysiology of spasticity.</li> </ul>	<ul style="list-style-type: none"> <li>Describe functional anatomy, neuroanatomy and muscle control of gait and hand use.</li> </ul>	<ul style="list-style-type: none"> <li>Describe common types of spasticity seen in stroke, SCI, CP, TBI.</li> </ul>	<ul style="list-style-type: none"> <li>Describe abnormal gait patterns and hand deformity related to spasticity.</li> </ul>	<ul style="list-style-type: none"> <li>Describe causes and consequences of spasticity that need chemical neurolysis.</li> </ul>	MKS1 MKS2
Evaluation & Diagnosis	<ul style="list-style-type: none"> <li>Review physical and neurological examination of extremities.</li> <li>Review normal and abnormal gait due to spasticity.</li> <li>Review treatable causes of spasticity.</li> </ul>	<ul style="list-style-type: none"> <li>Obtain data from secondary sources and limited-reliable physical and neurological examination.</li> <li>Prescribe appropriate investigations to find treatable causes of spasticity.</li> </ul>	<ul style="list-style-type: none"> <li>Obtain important history and specific PE and neurological examination related to spasticity.</li> <li>Perform some special tests for assessing severity of spasticity.</li> </ul>	<ul style="list-style-type: none"> <li>Obtain complete and accurate history, PE and neurological examination related to spasticity.</li> <li>Perform specific tests in spastic limbs related to functional performance, gait patterns and hand use.</li> </ul>	<ul style="list-style-type: none"> <li>Obtain complete and accurate history, PE, neurological examination and specific tests, related to spasticity of upper and lower extremities.</li> </ul>	PC2 PC5 PC6 PLI2
Rehabilitation & Management	<ul style="list-style-type: none"> <li>Review basic knowledge in pharmacological and non-pharmacological treatment, <i>e.g. physical modalities, exercise, orthoses</i>.</li> <li>Review of stretching exercises of upper and lower extremities.</li> <li>Review anatomy of muscles and nerves of extremities.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate stretching exercises and proper positions to reduce spasticity.</li> <li>Prescribe physical modality and antispastic medication and appropriately monitor its efficacy.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate clinical reasoning in prescribing rehabilitation program, medication and chemo-neurolysis regarding EBM.</li> <li>Explain indication &amp; contraindication, chemical type &amp; dosage and steps of neurolysis to receive patient's informed consent.</li> <li>Identify anatomical landmarks and perform chemical neurolysis in common muscles, <i>e.g. calf, elbow/wrist flexors</i>, regarding standard precaution.</li> <li>Prescribe an appropriate lower extremity orthosis/splint (see EPA 9).</li> </ul>	<ul style="list-style-type: none"> <li>Choose correct muscles to be treated and explain dosage for neurolysis.</li> <li>Perform chemical neurolysis with appropriate guidance in less common muscles, <i>e.g. hamstring, finger/toe flexors</i>, regarding standard precaution.</li> <li>Manage complications during the procedure appropriately.</li> <li>Prescribe an appropriate upper extremity orthosis/splint (see EPA 9).</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate clinical reasoning in prescribing rehabilitation program including medication, physical/occupational therapy, exercise, orthosis and chemo-neurolysis.</li> <li>Demonstrate patient informing skill in appropriate manner.</li> <li>Perform accurate chemical neurolysis with appropriate guidance.</li> </ul>	MKS1 MKS2 ICS4 ICS6 PLI1 SPB3
Workplace-based Assessment (WPBA)		<b>CbD:</b> 1 common case with spasticity	<b>DOPS:</b> 1 common case of chemo-neurolysis	<b>DOPS:</b> 1 case of chemo-neurolysis using appropriate guidance	<b>Summary of WPBA</b> <ul style="list-style-type: none"> <li><b>CbD:</b> 1 case</li> <li><b>DOPS:</b> 2 cases</li> </ul>	

Note: CP, cerebral palsy; EBM, evidence-based medicine; PE, physical examination; SCI, spinal cord injury; TBI, traumatic brain injury



## EPA 7: Managing Electrodiagnosis (EDx) and Neuro-muscular Diseases /Disorders (NMDs)

	Prerequisite	Milestones			Expected Outcomes & Competencies	
		M 1	M 2	M 3	Details	Codes
Knowledge	<ul style="list-style-type: none"> <li>Review anatomy and physiology of neuro-muscular system, pathophysiology of nerve diseases/injury, and common NMDs.</li> </ul>	<ul style="list-style-type: none"> <li>Describe common entrapments of median, ulnar, and peroneal nerves.</li> </ul>	<ul style="list-style-type: none"> <li>Describe plexopathy/injury of brachial plexus and lumbosacral plexus.</li> <li>Describe radiculopathy/injury of cervical, lumbar and sacral nerve roots.</li> </ul>	<ul style="list-style-type: none"> <li>Describe polyneuropathy, myopathy disease, NMJ disease, and anterior horn cell diseases</li> </ul>	<ul style="list-style-type: none"> <li>Describe knowledge about EDx study in peripheral nerve entrapment/injury, radiculopathy, plexopathy and other NMDs.</li> </ul>	MKS1 MKS2
Evaluation & Diagnosis	<ul style="list-style-type: none"> <li>Review symptoms and signs of NMDs.</li> </ul>	<ul style="list-style-type: none"> <li>Perform general history taking, PE, &amp; neurological examination to make provisional and differential diagnosis.</li> <li>Describe indications and planning for EDx study, focusing on NCS.</li> </ul>	<ul style="list-style-type: none"> <li>Identify indications and contraindications of needle EMG.</li> <li>Identify necessary muscles for needle EMG.</li> </ul>	<ul style="list-style-type: none"> <li>Identify those who need other EDx tests, <i>e.g. RNS, blink reflex, SFEMG, SSR, SSEPs, MEPs</i>, for proper diagnosis.</li> </ul>	<ul style="list-style-type: none"> <li>Make proper provisional and differential diagnoses of NMDs.</li> <li>Make a proper plan for EDx study focusing on NCS and needle EMG.</li> <li>Identify normal and abnormal SSR, SFEMG, SSEPs, and MEPs.</li> </ul>	PC1 PC4
Rehabilitation & Management	<ul style="list-style-type: none"> <li>Review a principle of Informed consent.</li> <li>Review safety precaution when using electrical stimulation and an EMG needle to avoid electrical shock and a needle injury.</li> </ul>	<ul style="list-style-type: none"> <li>Provide an appropriate informed consent for EDx.</li> <li>Select and perform proper and necessary EDx tests according to the above-mentioned conditions</li> <li>Complete an EDx report with correct interpretation, grading severity of diseases/injuries</li> </ul>			<ul style="list-style-type: none"> <li>Discuss the electrophysiology of common normal and abnormal findings encountered in EMG/NCS.</li> <li>Perform accurate EDx tests (NCS and needle EMG).</li> <li>Integrate overall EDx findings with all clinical data.</li> <li>Write complete and accurate EDx reports.</li> <li>Provide adequate and appropriate counseling and patient education.</li> <li>Refer to another specialist when necessary.</li> </ul>	ICS4 SBP3 PF2 PLI1
	<ul style="list-style-type: none"> <li>Review patient education &amp; counseling about EDx.</li> </ul>	<ul style="list-style-type: none"> <li>Perform motor &amp; sensory NCS accurately</li> </ul>	<ul style="list-style-type: none"> <li>Perform adequate needle EMG examination and late responses accurately.</li> </ul>	<ul style="list-style-type: none"> <li>Perform RNS and blink reflex accurately.</li> </ul>		ICS1 ICS6 PC3 PC5
Workplace-based Assessment (WPBA)		<b>DOPS &amp; MDR (report):</b> 2 cases of peripheral nerve entrapment	<b>DOPS &amp; MDR (report):</b> 2 cases of cervical/lumbosacral radiculopathy/plexopathy/injury	<b>DOPS &amp; MDR (report):</b> 2 cases of MNDs, polyneuropathy, NMJ or myopathy	<b>Summary of WPBA</b> <ul style="list-style-type: none"> <li><b>DOPS:</b> 6 cases</li> <li><b>MDR (reports):</b> 6 cases</li> </ul>	

Note: EDx, electrodiagnosis; EMG, electromyography; MEPs, motor evoked potentials; MND, motor neuron disease; NCS, nerve conduction study; NMD, neuromuscular disease; NMJ, neuromuscular junction; PE, physical examination; RNS, repetitive nerve stimulation; SFEMG, single fiber EMG; SSEPs, somatosensory evoked potentials; SSR, sympathetic skin response.

## EPA 8: Evaluating and Managing Amputees and Prostheses

	Prerequisite	Milestones			Expected Outcomes & Competencies	
		M 1	M 2	M 3	Details	Codes
Knowledge	<ul style="list-style-type: none"> <li>Review causes of amputations.</li> <li>Review classification, levels, and techniques of amputation.</li> </ul>	<ul style="list-style-type: none"> <li>Describe amputation wound care.</li> <li>Describe concept of pre-prosthetic treatment and care.</li> </ul>	<ul style="list-style-type: none"> <li>Describe different levels of LE amputations.</li> <li>Describe prostheses for LE and basic components.</li> </ul>	<ul style="list-style-type: none"> <li>Describe gait deviations found in LE amputees.</li> <li>Describe motion analysis in LE amputees.</li> <li>Describe UE amputation and prostheses.</li> </ul>	<ul style="list-style-type: none"> <li>Describe causes, levels of LU &amp; UE amputation and related consequences and complications.</li> <li>Describe biomechanics related to amputees and gait patterns.</li> <li>Identify impairments and disability related to amputees.</li> </ul>	MKS1 MKS2
Evaluation & Diagnosis	<ul style="list-style-type: none"> <li>Review stump evaluation</li> <li>Review phantom sensation and pain.</li> <li>Review X-ray findings of osteomyelitis after amputation.</li> </ul>	<ul style="list-style-type: none"> <li>Identify stump maturity, and common complications in amputee, <i>e.g. stitch abscess, osteomyelitis, neuroma.</i></li> </ul>	<ul style="list-style-type: none"> <li>Identify expected functional levels, K-levels, of LE amputees.</li> </ul>	<ul style="list-style-type: none"> <li>Perform gait evaluation/analysis in LE amputees.</li> <li>Identify causes of abnormal gait patterns.</li> </ul>	<ul style="list-style-type: none"> <li>Identify maturity of stump, types and details of amputation, gait patterns and functional levels.</li> <li>Identify risk and comorbidity.</li> <li>Identify patient's goal and limitation.</li> </ul>	PC1 PC2 PC4
Rehabilitation & Management	<ul style="list-style-type: none"> <li>Review classification of prostheses.</li> <li>Review stump bandaging.</li> <li>Review gait aids.</li> <li>Review holistic rehabilitation management, phases of amputee rehabilitation, psychosocial counseling.</li> <li>Review ICD-10 related to limb loss and ICD 9CM related to treatment/rehabilitation.</li> <li>Review disability rights, and referral system for high-cost prosthesis.</li> </ul>	<ul style="list-style-type: none"> <li>Manage stump care/bandaging properly.</li> <li>Provide proper pre-prosthetic training program.</li> <li>Demonstrate adequate patient and family education.</li> <li>Complete a medical record with relevant data.</li> <li>Write a medical certification for permanent disability with correct and adequate information.</li> </ul>	<ul style="list-style-type: none"> <li>Prescribe proper components of LE prosthesis.</li> <li>Train amputees how to use and maintain LE prosthesis properly.</li> <li>Provide a holistic rehabilitation care to promote independent living.</li> <li>Provide adequate and appropriate counseling and patient education.</li> </ul>	<ul style="list-style-type: none"> <li>Perform adequate check out LE prosthesis.</li> <li>Correct gait deviations and train amputees how to use and maintain AK/TF prostheses.</li> <li>Recognize and identify indications for advanced or high-cost prosthesis to promote return-to-work.</li> <li>Write a medical application form for a high-cost prosthesis (see EPA 11)</li> <li>Referral amputees to other specialists for proper management.</li> </ul>	<ul style="list-style-type: none"> <li>Prescribe proper prosthetic components for amputees.</li> <li>Perform a check out and be able to suggest a proper adjustment if needed.</li> <li>Set appropriate goals, treatments, and rehabilitation therapy.</li> <li>Provide proper counseling.</li> <li>Conduct an interdisciplinary approach including vocational rehabilitation.</li> <li>Refer amputees to other specialists timely and appropriately.</li> <li>Complete a medical record.</li> <li>Educate patients about disability rights.</li> <li>Write a medical certificate for permanent disability and when requesting of a high-cost prosthesis.</li> </ul>	PC3 PC5 PC6 ICS1 ICS4 PF1 PF2 SBP1 SBP3
Workplace-based Assessment (WPBA)		Mini-CEX 1 stump management	CbD: 1 BK/TT amputee	Mini-CEX: 1 case of check-out BK/AK prosthesis	<b>Summary of WPBA</b> <ul style="list-style-type: none"> <li>Mini-CEX: 2 cases</li> <li>CbD: 1 case</li> </ul>	

Note: AK, above knee; BK, below knee; ICD, International Statistical Classification of Diseases and Related Health Problems; LE, lower extremity; TF, transfemoral; TT, transtibial; UE, upper extremity

## EPA 9: Evaluating and Managing Orthoses

	Prerequisite	Milestones			Expected Outcomes & Competencies	
		M 1	M 2	M 3	Details	Codes
Knowledge	<ul style="list-style-type: none"> <li>Review basic knowledge of MSK and neurological weakness and movement impairment.</li> </ul>	<ul style="list-style-type: none"> <li>Describe conditions in need of prefabricated support or orthoses, <i>e.g. LS support, knee support, thumb spica, spinal orthoses for spinal fractures.</i></li> <li>Describe basic biomechanisms and principles of orthoses.</li> </ul>	<ul style="list-style-type: none"> <li>Describe conditions, <i>e.g. paraplegia/tetraplegia, arthropathy of hand or tendon injury</i>, in need of a custom-made UE/LE splint/orthosis.</li> <li>Describe complex biomechanics of orthosis for contracture, spastic and weakness.</li> </ul>	<ul style="list-style-type: none"> <li>Describe conditions in need of a custom-made spinal orthosis, <i>e.g. scoliosis, severe spinal deformity.</i></li> </ul>	<ul style="list-style-type: none"> <li>Describe the principles of biomechanics of spine and extremity, orthosis, and indications for orthosis prescription.</li> </ul>	MKS1 MKS2
Evaluation & Diagnosis	<ul style="list-style-type: none"> <li>Review physical and neurological examination of weakness, contracture, spasticity and deformity.</li> <li>Review normal X-ray of extremities and spine.</li> </ul>	<ul style="list-style-type: none"> <li>Describe indications &amp; precautions for using supports or orthoses according to patient's MSK conditions.</li> </ul>	<ul style="list-style-type: none"> <li>Assess musculoskeletal &amp; neuromuscular impairments.</li> <li>Assess impairments with functional ambulatory category, Fugl-Meyer UE scale, and hand function scale.</li> </ul>	<ul style="list-style-type: none"> <li>Assess scoliosis from physical examination.</li> <li>Interpret scoliosis film series and identify curve progression: Cobb angle and Risser sign.</li> </ul>	<ul style="list-style-type: none"> <li>Identify impairments and activity limitations as consequences of neuromusculoskeletal disease/disorder/injury.</li> <li>Identify indications and goals for orthoses prescription.</li> <li>Select appropriate investigations for specifying a proper orthosis prescription.</li> </ul>	PC1 PC2 PC4
Rehabilitation & Management	<ul style="list-style-type: none"> <li>Review orthotic components, materials, designs and fabrication of spinal, UE and LE orthoses, footwear modification; benefits of orthoses and precautions.</li> </ul>	<ul style="list-style-type: none"> <li>Prescribe a proper prefabricated support or orthosis.</li> <li>Advise and train a patient how to don-doff a support or orthosis.</li> </ul>	<ul style="list-style-type: none"> <li>Prescribe a proper custom-made orthosis of UE/LE including selection of components and materials.</li> <li>Advise and train a patient how to effectively use a splint/orthosis.</li> <li>Integrate the uses of splint/orthosis with general rehabilitation management.</li> </ul>	<ul style="list-style-type: none"> <li>Prescribe and check out a custom-made scoliosis brace.</li> <li>Advise and train a patient how to effectively apply a custom-made scoliosis brace and exercise.</li> <li>Write a referral for getting a proper custom-made scoliotic brace.</li> </ul>	<ul style="list-style-type: none"> <li>Prescribe proper orthosis components suitable for medical conditions.</li> <li>Perform a check out and be able to suggest a proper adjustment if needed.</li> <li>Set appropriate goals, treatments, and rehabilitation program.</li> <li>Provide proper counseling.</li> <li>Conduct an interdisciplinary approach including vocational rehabilitation and a referral to other healthcare facility.</li> <li>Educate patients about disability rights.</li> </ul>	PC3 PC5 PC6 ICS1 ICS4 PF1 PF2 SBP1 SBP3
Workplace-based Assessment (WPBA)		mini-CEX: 1 case in need of a prefabricated support or orthosis	CbD: 1 case in need of a custom-made UE/LE orthosis	CbD: 1 case of scoliosis in need of a custom-made spinal brace	<b>Summary of WPBA</b> <ul style="list-style-type: none"> <li>mini-CEX: 1case</li> <li>CbD: 2 cases</li> </ul>	

Note: LE, lower extremity; LS, lumbosacral; MSK, musculoskeletal; UE, upper extremity

## EPA 10: Evaluating and Managing Foot Disorders

	Prerequisite	Milestones			Expected Outcomes& competencies	
		M 1	M 2	M 3	Details	Codes
Knowledge	<ul style="list-style-type: none"> <li>Review anatomy and functional anatomy of ankle and foot.</li> </ul>	<ul style="list-style-type: none"> <li>Describe biomechanics of ankle and foot.</li> <li>Describe common foot pain and foot deformity problems.</li> </ul>	<ul style="list-style-type: none"> <li>Describe pathophysiology of diabetic foot and complications.</li> </ul>	<ul style="list-style-type: none"> <li>Describe complicated foot pain and foot deformity.</li> <li>Describe toe or partial foot amputations.</li> </ul>	<ul style="list-style-type: none"> <li>Describe basic anatomy, applied functional anatomy, biomechanics of ankle and foot disorders and pathophysiology of DM foot.</li> </ul>	MKS1 MKS2
Evaluation & Diagnosis	<ul style="list-style-type: none"> <li>Review physical examination of ankle and foot.</li> <li>Review risk of diabetic foot ulcer.</li> <li>Review normal X-ray of ankle and foot.</li> </ul>	<ul style="list-style-type: none"> <li>Identify impairments and mobility limitation as consequences of foot disorders.</li> <li>Make diagnosis related to simple foot pain and/or deformities, <i>e.g. hallux valgus, plantar fasciitis, pes planus, pes cavus.</i></li> </ul>	<ul style="list-style-type: none"> <li>Screen and classify risk of diabetic foot ulcer.</li> <li>Diagnose diabetic foot ulcer with proper clinical reasoning.</li> <li>Interpret foot pressure graph and ABI.</li> </ul>	<ul style="list-style-type: none"> <li>Diagnose complicated foot pain and deformity such as PTTD, chronic ankle sprain.</li> <li>Evaluate complicated foot problems, <i>e.g. diabetic foot ulcer, Charcot foot.</i></li> <li>Identify the abnormal gait patterns resulting from partial foot amputations.</li> </ul>	<ul style="list-style-type: none"> <li>Identify impairments and activity limitation as consequences of foot disorders.</li> <li>Perform correct evaluation techniques of simple and complicated ankle and foot pain and/or deformities including diabetic foot.</li> <li>Identify other complications and major co-morbid conditions.</li> </ul>	PC1 PC2 PC4
Rehabilitation & Management	<ul style="list-style-type: none"> <li>Review clinical reasoning in goal setting and treatment planning.</li> <li>Review health services and system for patients with diabetic foot.</li> <li>Review ICD-10, ICD-9CM for foot disorders, and payment system for shoe modification and orthosis.</li> </ul>	<ul style="list-style-type: none"> <li>Describe types of footwears/foot orthoses.</li> <li>Prescribe proper shoes, shoe modifications and orthosis for common foot pain and foot deformities as the above-mentioned.</li> <li>Provide patient education on how to wear proper shoes and/or orthosis, and to care foot.</li> <li>Prescribe general rehabilitation treatment, <i>e.g. exercise, physical modality for foot pain.</i></li> </ul>	<ul style="list-style-type: none"> <li>Manage callus properly.</li> <li>Provide holistic diabetic foot care for uncomplicated diabetic foot with/without ulcer according to national diabetic foot care plan.</li> <li>Complete medical record according to ICD and payment system for shoes and ankle/foot orthosis.</li> </ul>	<ul style="list-style-type: none"> <li>Prescribe and fit proper devices for complicated foot disorders including diabetic foot ulcers with shoe modifications and orthosis/ TCO, custom-made shoes, custom-molded shoes, orthosis, <i>e.g. UCBL shoe insert, SMO, CROW walker.</i></li> <li>Consult or referral case for surgical management.</li> <li>Manage wound care in toe/partial foot amputee.</li> </ul>	<ul style="list-style-type: none"> <li>Set appropriate plan and goals for treatments and rehabilitation.</li> <li>Manage with a holistic interdisciplinary approach.</li> <li>Give advice and prescribe proper shoes, shoe modifications, orthosis, and custom-made/molded shoes.</li> <li>Perform fitting/check out and suggest adjustment as necessary.</li> <li>Demonstrate concern of health services/system/policy and cost-effectiveness of prescribing shoe modification and orthosis.</li> </ul>	PC5 PC6 ICS1 ICS4 PF1 PF2 SBP1 SBP3
Workplace-based Assessment (WPBA)		mini-CEX: 1 case of common foot pain/deformity	mini-CEX: 1 case of diabetic foot	CbD: 1 case of complicated foot problems	Summary of WPBA <ul style="list-style-type: none"> <li>mini-CEX: 2 cases</li> <li>CbD: 1 case</li> </ul>	

Note: ABI, ankle-brachial index; DM, diabetes mellitus; ICD, International Statistical Classification of Diseases and Related Health Problems; PTTD, posterior tibial tendon dysfunction; TCO, total contact orthosis; UCBL, University of California Berkeley Laboratories; SMO, supra-malleolar orthosis; CROW, Charcot restraint orthotic walker

## EPA 11: Evaluating and Managing Persons with Disabilities (PWD)

	Prerequisite	Milestones			Expected Outcomes & Competency	
		M 1	M 2	M 3	Details	Codes
Knowledge	<ul style="list-style-type: none"> <li>Review concepts of disability according to UNCRPD and Thai legislation, e.g. <i>Empowerment of PWD Act, B.E. 2550. (2007) and amendment (Vol. 2) B.E. 2556 (2013).</i></li> </ul>	<ul style="list-style-type: none"> <li>Describe disability concepts and the rights of PWD according to UNCRPD and Thai legislation.</li> </ul>	<ul style="list-style-type: none"> <li>Describe healthcare and rehabilitation system and policy towards rehabilitation of PWD in Thailand including IMC, LTC and CBR.</li> </ul>	<ul style="list-style-type: none"> <li>Describe different health insurance schemes: UC, civil servant, and social security, and private schemes; and health benefits in Thailand.</li> </ul>	<ul style="list-style-type: none"> <li>Describe disability concept and models according to ICF, UNCRPD and the Empowerment of PWD Act, B.E. 2550. (2007) and amendment (Vol. 2) B.E. 2556 (2013).</li> <li>Differentiate the sick from the disabled.</li> <li>Describe healthcare and rehabilitation service, system and policy in Thailand.</li> </ul>	MKS1
Evaluation & Diagnosis	<ul style="list-style-type: none"> <li>Review ICF concepts &amp; framework.</li> <li>Review definition of PWD according to Thai legislation.</li> </ul>	<ul style="list-style-type: none"> <li>Identify disability and barriers of environmental and personal factors based on ICF.</li> <li>Assess persons with <i>physical disability</i> based on the current disability assessment protocol.</li> </ul>	<ul style="list-style-type: none"> <li>Assess persons with physical disability and other disablement based on the current disability assessment protocols.</li> </ul>	<ul style="list-style-type: none"> <li>Identify health and social benefits and needs of PWD according to CBR matrix.</li> <li>Assess PWD based on different health insurances.</li> </ul>	<ul style="list-style-type: none"> <li>Write an accurate medical record regarding disability.</li> <li>Explain the process of PWD registration especially for those with physical disability.</li> </ul>	PC2
Rehabilitation & Management	<ul style="list-style-type: none"> <li>Review health and social benefits of PWD according to the Thai legislation.</li> </ul>	<ul style="list-style-type: none"> <li>Write a correct medical certificate for physical disability according to the Thai legislation.</li> <li>Provide proper medical rehabilitation program and conduct interdisciplinary team approach to improve PWD's functioning and QoL.</li> </ul>	<ul style="list-style-type: none"> <li>Inform individual PWD about his/her rights and the access to benefits in areas other than healthcare according to CBR matrix: health, education, social, vocation, empowerment and environment.</li> <li>Apply concepts of IMC, CBR, and the current policies under Thai healthcare system to improve PWD's QOL.</li> </ul>	<ul style="list-style-type: none"> <li>Write a correct medical certification for disability based on social security and private health insurance protocols</li> <li>Write a medical application form requesting for a high-cost assistive device or technology.</li> </ul>	<ul style="list-style-type: none"> <li>Write a correct medical certification for permanent disability correctly.</li> <li>Provide adequate and update information about PWD's rights and benefits as well as access to the benefits in healthcare, rehabilitation and assistive device/ technology, education, vocation, social, etc.</li> </ul>	PC5 PC6 ICS1 ICS4 PF2 SBP1
Workplace-based Assessment (WPBA)		MDR: 2 cases with disability certificates	mini-CEX: 2 cases of counselling and advise PWD	CbD: 1 home visit case with complex disabilities by applying ICF framework and CBR matrix	Summary of WPBA <ul style="list-style-type: none"> <li>CbD: 1 case</li> <li>mini-CEX: 2 cases</li> <li>MDR (PWD medical certificate): 2 cases</li> </ul>	

Note: CBR, community-based rehabilitation; ICF, International Classification of Functioning, Disability and Health; IMC, intermediate care; LTC, long-term care; QoL, quality of life; PWD, person with disability; UC, universal health coverage scheme; UNCRPD, United Nations Conventions on the Rights of Persons with Disabilities

## EPA 12: Leading and Coordinating Interdisciplinary Team

	Prerequisite	Milestones			Expected Outcomes & Competencies	
		M 1	M 2	M 3	Details	Codes
Knowledge	<ul style="list-style-type: none"> <li>Review disease, injury, disease causing disability.</li> <li>Review basic psycho-social issues.</li> <li>Review non-technical skills: decision making, team communication.</li> </ul>	<ul style="list-style-type: none"> <li>Describe expected rehabilitation outcomes of common diseases based on individual and society circumstances.</li> <li>Describe concepts of HA.</li> </ul>	<ul style="list-style-type: none"> <li>Describe non-technical skills including RCA necessary for leading and coordinating team.</li> </ul>	<ul style="list-style-type: none"> <li>Describe risk and conflict management, behavioral modification, and personal and inter-personal characteristics essentials for successful team management.</li> </ul>	<ul style="list-style-type: none"> <li>Describe and apply non-technical skills to lead and coordinate interdisciplinary team efficiently and effectively.</li> </ul>	MKS1 MKS2
Evaluation & Diagnosis	<ul style="list-style-type: none"> <li>Review physiatric (rehabilitation) evaluation including functional and disability evaluation.</li> <li>Review ICF, problem-oriented medical records (S-O-A-P), ICD-10 and ICD-9CM.</li> </ul>	<ul style="list-style-type: none"> <li>(Re-) assess a case based on ICF, and holistic comprehensive approach.</li> <li>List rehabilitation problems including patient's needs and expectation, and environmental factors.</li> </ul>	<ul style="list-style-type: none"> <li>Identify poor prognostic factors for rehabilitation, specific rehabilitation issues by using specific assessment tools.</li> <li>Apply RCA to identify root causes of rehabilitation problems.</li> </ul>	<ul style="list-style-type: none"> <li>Identify risks, conflict and barriers to achieve rehabilitation goals.</li> </ul>	<ul style="list-style-type: none"> <li>Complete a list of medical, surgical and rehabilitation problems.</li> </ul>	PC2
Rehabilitation & Management	<ul style="list-style-type: none"> <li>Review rehabilitation therapy, <i>e.g. physical modalities, PT, OT, assistive devices</i>.</li> <li>Review different types of team approaches.</li> <li>Review healthcare service, system and policy in rehabilitation</li> <li>Review patient safety and precaution.</li> </ul>	<ul style="list-style-type: none"> <li>Gather, present and discuss data/information necessary from team meeting.</li> <li>Complete medical record.</li> <li>Discuss the necessity and advantage of rehabilitation PCT.</li> </ul>	<ul style="list-style-type: none"> <li>Distinguish between a medical role of a rehabilitation physician/physiatrist and that of a rehabilitation PCT leader.</li> <li>Provide comments on any barriers to achievement, and suggestions for improvement and continued care including referral.</li> </ul>	<ul style="list-style-type: none"> <li>Lead team direction with common goals.</li> <li>Demonstrate a leadership leading the rehabilitation PCT with adequate knowledge and sound clinical reasoning.</li> <li>Minimize conflict and modify behavior for better team performance.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate as an efficient leadership in conducting and supervising the rehabilitation PCT for efficient teamwork and achieving effective in rehabilitation outcomes.</li> </ul>	PC5 PC3 PC6 ICS1 ICS2 ICS3 ICS4 ICS5 PLI1
Workplace-based Assessment (WPBA)		MSF 360° 2 times Team meeting 1 time (presenting/discussing case)	MSF 360° 2 times	MSF 360° 2 times Team meeting 1 time (leading/conducting meeting)	<b>Summary of WPBA</b> <ul style="list-style-type: none"> <li>MSF: 360° 6 times Team meeting 2 times</li> </ul>	

Note: HA, hospital accreditation; ICD, International Statistical Classification of Diseases and Related Health Problems; ICF, International Classification of Functioning, Disability and Health; PCT, patient care team; PT, physical therapy; OT, occupational therapy; RCA, root cause analysis; S-O-A-P, subjective-objective-assessment-planning for investigation/treatment



### EPA 13: Conducting a Research in Medical Rehabilitation

	Prerequisite	Milestones			Expected Outcomes& Competencies	
		M 1	M 2	M 3	Details	Codes
Knowledge	<ul style="list-style-type: none"> <li>Review research methodology and medical statistics.</li> </ul>	<ul style="list-style-type: none"> <li>Describe research methodology: rationale, research question, objective, study design, study population including sampling technique, allocation; intervention and outcome measurements.</li> </ul>	<ul style="list-style-type: none"> <li>Describe principles of research ethics and GCP in research, and SoP.</li> </ul>	<ul style="list-style-type: none"> <li>Describe different types of statistical analysis, and process of data analysis.</li> <li>Describe principles of different research presentations e.g. oral presentation, manuscript, research poster.</li> </ul>	<ul style="list-style-type: none"> <li>Apply research methodology and medical statistic in writing a research proposal related to rehabilitation medicine/services.</li> <li>Demonstrate a good attitude towards doing a clinical research.</li> </ul>	MKS2
Rehabilitation & Management	<ul style="list-style-type: none"> <li>Review principles of EBM and search engine.</li> <li>Review principles of writing a research protocol and preparing a CRF.</li> </ul>	<ul style="list-style-type: none"> <li>Use the search engine to explore EBM.</li> <li>Do a critical appraisal of a simple study design and easy content.</li> <li>Prepare proper CRFs.</li> <li>Complete a research proposal and get approval by the RCPHysiatrT Research Sub-committee.</li> </ul>	<ul style="list-style-type: none"> <li>Critically appraise more complicated study design and contents.</li> <li>Register one's own research protocol to the IRB and registration center.</li> <li>Conduct the research protocol under supervised advisers and with GCP.</li> </ul>	<ul style="list-style-type: none"> <li>Critically appraise meta-analysis or network meta-analysis.</li> <li>Perform data collection, results analysis and conclusion.</li> <li>Write a full manuscript according to the ASEAN J Rehabil Med template.</li> <li>Present the research to the sub-committee.</li> </ul>	<ul style="list-style-type: none"> <li>Conduct successfully a valuable research study.</li> <li>Demonstrate capability to criticize the research literatures.</li> </ul>	PLI2 PLI 3 PF2 PF3 PF4 SBP2
Workplace-based Assessment (WPBA)		<ul style="list-style-type: none"> <li>Present one's own research protocol to the Research Sub-committee of the RCPHysiatrT for approval</li> </ul>	<ul style="list-style-type: none"> <li>Present a progression of the study to institutional staffs</li> </ul>	<ul style="list-style-type: none"> <li>Full manuscript for publication</li> <li>Oral presentation to the research committee</li> </ul>	<b>Summary of WPBA</b> <ul style="list-style-type: none"> <li><b>Research proposal:</b> one's own project</li> <li><b>Oral presentation:</b> one's own project</li> <li><b>Research manuscript:</b> one's own project</li> <li><b>RCA:</b> 5 times</li> <li><b>Journal club attendance:</b> 24 times</li> </ul>	
Minimum No. of critical appraisal of research articles		2 articles of observational or systematic review	2 articles of clinical trials	1 article of meta-analysis		
Minimum No. of attending journal club		8 sessions	8 sessions	8 sessions		

Note: ASEAN J Rehabil Med, ASEAN Journal of Rehabilitation Medicine; CRF, case record form; GCP, good clinical practice; EBM, evidence-based medicine; IRB, institute research board; RCPHysiatrT, the Royal College of Physiatrists of Thailand; SoP, standard of operation



# Workplace Based Assessment (WPBA)



## Workplace Based Assessment (WPBA)

According to the World Federation of Medical Education (WFME) Global Standards for Quality Improvement of Postgraduate Medical Education, the program providers (training institutes) have to *ensure that assessments cover knowledge, skills and attitudes so that the intended educational outcomes are met by the trainees*. So far, traditional assessments such as multiple choices examination for knowledge, objective structured clinical examinations (OSCEs) and long case examination seem not enough to ensure that trainees have attained sufficient specific competence. And, workplace-based assessment (WPBA) has been introduced for *evaluating trainees' performance in real workplace environment and allowing trainers/assessors to provide timely, specific, constructive, and fair feedback* for trainees' improvement. Common tools used for WPBA are direct observation of procedural skills (DOPSs), mini-clinical evaluation exercise (mini-CEX), case-based discussion (CbD), and multisource feedback (MSF).

After two recent brainstorming and discussion sessions, the EPAs and WPBA working group has been able to revise the current WPBA assessment forms of DOPS, mini-CEX, CbD, medical document review (MDR) and MSF (previously called leading team/meeting), for evaluating trainees' performance. Assessors are suggested to use these forms for formative assessment in clinical practice. The DOPS, mini-CEX, CbD and MSF assessment forms should be used in different situations and milestones by different or multiple assessors to evaluate expected outcomes and competencies of each EPA. Besides, minor revisions of the above-mentioned assessment forms. One new assessment form of research critical appraisal (RCA), is now available for EPA 13 – conducting research in rehabilitation medicine. And, the revised MSF assessment form now contains Thai translation. Each training institute is allowed to use this revised one or its own MSF form.

Following are six WPBA assessment forms for:

1. Mini-Clinical Evaluation Exercise (mini-CEX)
2. Direct Observation Procedural Skills (DOPS)
3. Case-based Discussion (CbD)
4. Medical Document Review (MDR)
5. Multi-source feedback (MSF)
6. Research critical appraisal (RCA)

Using WPBA by all training institutes would surely promote trainees learning and ensure trainees' performance and competence according to the Rehabilitation Medicine intended outcomes.

Mini-Clinical Evaluation Exercise (mini-CEX) <i>By the Royal College of Physicians of Thailand</i>				ID No. of resident:				
Points for Observation: Doctor-patient interaction				Name of resident:				
Patient ID .....		Setting						
Sex: <input type="checkbox"/> M <input type="checkbox"/> F		<input type="checkbox"/> IPD <input type="checkbox"/> Special clinic						
Age: ..... years		<input type="checkbox"/> OPD <input type="checkbox"/> Other .....						
Diagnosis:				Level of performance				
Competencies	EPAs			Not applicable	Not done	Unsatisfactory	Satisfactory	Superior
	<input type="checkbox"/> 1-MSK, pain <input type="checkbox"/> 2-Brain disorders <input type="checkbox"/> 3-SCI <input type="checkbox"/> 4-Pediatrics	<input type="checkbox"/> 5-Cardiopulmonary <input type="checkbox"/> 6-Spasticity <input type="checkbox"/> 7-EDx, NMD <input type="checkbox"/> 8-Prostheses	<input type="checkbox"/> 9-Orthoses <input type="checkbox"/> 10-Foot/footwear <input type="checkbox"/> 11-Disability <input type="checkbox"/> Other.....					
PC1	1. Medical interviewing skills for history taking							
PC1	2. Physical and/or neurological examination skills							
PC4	3. Interpretation/application of investigation, <i>e.g. laboratory tests, x-ray</i>							
PC1	4. Making diagnosis and differential diagnosis							
PC2	5. Assessing and identifying disability and related contextual factors							
PC5	6. Planning treatment/rehabilitation and setting SMART goals							
PLI1 PLI2 SBP1 SBP3	7. Making appropriate clinical judgment and ethical decision <i>Based on evidence-based medicine; concerning on health service/system/ policy, law, ethics and cost-effectiveness; patient's preference, needs and expectation</i>							
ICS4	8. Educating patient/family <i>To make them understand, accept, comply/adhere to advice</i>							
MKS1 PF1	9. Providing/prescribing choices of medications/therapy <i>To promoting patient's/family's autonomy/self-efficacy</i>							
SBP3	10. Concerning of patient safety (side/adverse effect)							
PC3	11. Making an appropriate referral or follow-up							
ICS6	12. Counselling skills <i>Attending, silence, rapport building, immediacy, focusing, questions, summarizing, reflection/paraphrasing</i>							
ICS5	13. Communication skills <i>Interviewing, information giving, breaking the bad news including disability, etc.</i>							
PF2	14. Professional manner <i>Behaving appropriate manner</i>							
SBP1 SBP3	15. Organizing efficiently <i>Managing time, leading rehab team, etc.</i>							
Resident's reflection on his/her performance								
Staff's evaluation summary				Overall actual performance				
Milestone evaluated	Suitability for milestone	Time used						
<input type="checkbox"/> M1	<input type="checkbox"/> Appropriate	<input type="checkbox"/> Appropriate	<input type="checkbox"/> Good, above standard					
<input type="checkbox"/> M2	<input type="checkbox"/> No, too easy	<input type="checkbox"/> Not Appropriate	<input type="checkbox"/> Pass, satisfied, standard					
<input type="checkbox"/> M3	<input type="checkbox"/> No, too difficult		<input type="checkbox"/> Borderline					
			<input type="checkbox"/> Poor, failed					
Staff's feedback				Staff/Assessor's Name & Signature				
				Date of evaluation: .....				

Direct Observation of Procedural Skills (DOPS) <i>By the Royal College of Psychiatrists of Thailand</i>				ID No. of resident:				
Points for Observation: Procedural skills and doctor-patient interaction				Name of resident:				
Patient ID ..... Sex: <input type="checkbox"/> M <input type="checkbox"/> F Age: ..... Years								
Diagnosis:								
Competencies	DOPS		EPAs	Level of performance				
	<input type="checkbox"/> TP injection <input type="checkbox"/> Cystometry / UDT <input type="checkbox"/> Dry needling <input type="checkbox"/> Chemoneurolysis <input type="checkbox"/> EDx – NCS <input type="checkbox"/> Other..... <input type="checkbox"/> EDx – EMG			Not applicable	Not done	Unsatisfactory	Satisfactory	Superior
PC1 PC5	1. Reviewing diagnoses/problems Previous lab tests, treatments <i>adequately</i>							
	2. Performing relevant physical/neurological examinations For planning of a procedure/investigation							
	3. Checking indication, contra-indication & precaution							
SBP3	4. Informing the patient about benefits and risks and asking for informed consent							
PC4	5. Selecting an appropriate procedure							
MKS1	6. Setting the equipment properly before starting the procedure							
	7. Selecting correct medication/solution needed for the procedure							
	8. Selecting a suitable body part (muscle, nerve, etc.) to be treated/tested							
ICS5	9. Informing an assistant how to assist before/during/after the procedure							
PC4 ICS4	10. Positioning the patient appropriately before/during/after the procedure							
	11. Being in a suitable place/position for better performance							
	12. Performing the technique correctly, efficiently, with sterile technique							
	13. Concerning of safety precaution <i>Monitoring vital signs or unwanted event, complications during/after performing the procedure, and reacting promptly and correctly</i>							
ICS4 ICS6 SBP1 SBP3	14. Informing/warning the patient adequately/regularly <i>During the procedure</i>							
	15. Explaining findings/results <i>Of the investigation/procedure correctly and adequately</i>							
	16. Making recommendation for management <i>Based on ethical decision making</i>							
	17. Informing the patient choices of further treatment/management, <i>Including follow-up and/or referral if necessary</i>							
Resident's reflection on his/her performance								
Staff's evaluation summary			Overall actual performance					
Milestone evaluated:	Suitability for milestone	Time used	<input type="checkbox"/> Good, above standard <input type="checkbox"/> Pass, satisfied, standard <input type="checkbox"/> Borderline <input type="checkbox"/> Poor, failed					
<input type="checkbox"/> M1	<input type="checkbox"/> Appropriate	<input type="checkbox"/> Appropriate						
<input type="checkbox"/> M2	<input type="checkbox"/> No, too easy	<input type="checkbox"/> Not Appropriate						
<input type="checkbox"/> M3	<input type="checkbox"/> No, too difficult							
Staff's feedback			Staff/Assessor's Name & signature					
			Date of evaluation: .....					

<b>Case-based Discussion (CbD)</b> <i>By the Royal College of Psychiatrists of Thailand</i>			<b>ID No. of resident:</b>						
<b>Points for Discussion:</b> <i>Clinical reasoning and thinking</i>			<b>Name of resident:</b>						
<b>Patient ID</b> ..... <b>Setting</b> Sex: <input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> IPD <input type="checkbox"/> Special clinic Age: ..... years <input type="checkbox"/> OPD <input type="checkbox"/> Other .....									
<b>Competencies</b>	<b>Diagnosis:</b>				<b>Level of performance</b>				
	<b>EPAs</b> <input type="checkbox"/> 1-MSK, pain <input type="checkbox"/> 5-Cardiopulmonary <input type="checkbox"/> 9-Orthoses <input type="checkbox"/> 2-Brain disorders <input type="checkbox"/> 6-Spasticity <input type="checkbox"/> 10-Foot/footwear <input type="checkbox"/> 3-SCI <input type="checkbox"/> 7-EDx, NMD <input type="checkbox"/> 11-Disability <input type="checkbox"/> 4-Pediatrics <input type="checkbox"/> 8-Prostheses <input type="checkbox"/> Other.....				<b>Not applicable</b>	<b>Not done</b>	<b>Unsatisfactory</b>	<b>Satisfactory</b>	<b>Superior</b>
PC1 PC4 MKS1	1. Collecting medical information <i>History of illness, physical examination, investigation for primary diagnosis and secondary conditions (co-morbidity/complications)</i>								
PC2	2. Assessing pre-morbid and current functioning <i>For diagnosis of "disability"</i>								
ICS1	3. Listing/completing diagnoses & related problems <i>Impairment, activity limitation, participation restriction, environmental factors</i>								
PC3 PC5	4. Determining the most appropriate plans and goals <i>Rehabilitation plan and goal setting by processing the collected information</i>								
PC5 PC6	5. Creating details of treatments and rehabilitation programs <i>For comprehensive rehabilitation team management</i>								
SBP1 SBP3 PF5 PLI2	6. Ethically making decision on appropriate treatment options <i>Based on patient's medical condition; preference, needs and expectation; quality of life and functioning; and contextual factors*</i>								
PC3	7. Consulting associated professionals/experts (referral)								
ICS1 ICS4 ICS5 PF1	8. Delivering the determined treatment/rehabilitation plan/goals <i>Efficiently and accurately to rehabilitation team, patient and caregiver</i>								
PLI1 ICS2 PF4	9. Evaluating treatment/rehabilitation outcomes <i>To measure effectiveness</i>								
ICS2 PC5 PC6 SBP3	10. Reflecting and determining on the outcomes <i>Whether the current treatment/rehabilitation plan should be altered and what the future plan should be</i>								
* Contextual factors consist of environmental factors: products & technology, family support & relationship, attitude, health service/system/policy, law; and personal factors, e.g. patient's attitude, coping strategy.									
<b>Resident's reflection on his/her performance</b>									
<b>Staff's evaluation summary</b>					<b>Overall actual performance</b>				
<b>Milestone evaluated</b> <input type="checkbox"/> M1 <input type="checkbox"/> M2 <input type="checkbox"/> M3		<b>Suitability for milestone</b> <input type="checkbox"/> Appropriate <input type="checkbox"/> No, too easy <input type="checkbox"/> No, too difficult		<b>Time used</b> <input type="checkbox"/> Appropriate <input type="checkbox"/> Not Appropriate		<input type="checkbox"/> Good, above standard <input type="checkbox"/> Pass, satisfied, standard <input type="checkbox"/> Borderline <input type="checkbox"/> Poor, failed			
<b>Staff's feedback</b>					<b>Staff/Assessor's Name &amp; Signature</b>				
					Date of evaluation: .....				

<b>Medical Document Review (MDR)</b> <i>By the Royal College of Psychiatrists of Thailand</i>		<b>ID No. of resident:</b>					
<b>Points for Observation:</b> <i>Accountability, efficiency, effectiveness, safety</i>		<b>Name of resident:</b>					
<b>Patient ID</b> ..... <input type="checkbox"/> Not applicable Sex: <input type="checkbox"/> M <input type="checkbox"/> F    Age: ... years							
<b>Competencies</b>	<b>Type of Document:</b> <input type="checkbox"/> IPD <input type="checkbox"/> Cystometry/UDT <input type="checkbox"/> OPD <input type="checkbox"/> EDx report <input type="checkbox"/> Consultation <input type="checkbox"/> Medical certificate <input type="checkbox"/> for person with disability registration <input type="checkbox"/> for insurance <input type="checkbox"/> for high-cost assistive device	<b>EPAs</b> <input type="checkbox"/> 2-Brain/stroke <input type="checkbox"/> 3-SCI <input type="checkbox"/> 6-Spasticity <input type="checkbox"/> 7-EDx, NMD <input type="checkbox"/> 11-Disability	<b>Level of performance</b>				
			<b>Not applicable</b>	<b>Not done</b>	<b>Unsatisfactory</b>	<b>Satisfactory</b>	<b>Superior</b>
ICS1	<b>1. Contents</b>						
PC1	1.1 History of illness <i>Chief complaint, present illness, past medical history etc.</i>						
PC1	1.2 Physical and/or neurological examination						
PC2	1.3 Functional and environmental assessments: <i>Previous and present self-care, mobility, modified Barthel ADL index etc.</i>						
PC4	1.4 Investigations <i>Previous/current laboratory, imaging, EDx, cystometry/urodynamic etc.</i>						
PC1	1.5 Diagnosis, disability, and problem list <i>Impairment, activity limitation, participation restriction, environment</i>						
PC5	1.6 Plan for investigation, treatment, rehabilitation with goals setting						
PC5	1.7 Treatment, rehabilitation management and outcomes						
PC6	1.8 Progress note <i>First 3 days of admission, then weekly; S-O-A-P</i>						
PC3	1.9 Consultation request / report						
SBP2	1.10 Discharge planning <i>M-E-T-H-O-D</i>						
SBP1	1.11 Discharge summary <i>Principal diagnosis, co-morbidity, complication, external cause of injury, procedure; date of admission/discharge; discharge condition &amp; referral</i>						
ICS1	<b>2. Quality of data/information</b>						
	2.1 Relevant, correct, appropriate, adequate, complete						
	2.2 Clear, concise, readable, understandable						
	2.3 Name, date, time, signature						
<i>S-O-A-P, subjective-objective-assessment-plan</i> <i>M-E-T-H-O-D, medication, environment, equipment &amp; economics, treatment, health, outpatient appointment/referral, diet</i>							

<b>Staff's evaluation summary</b>		<b>Overall actual performance</b> <input type="checkbox"/> Good, above standard <input type="checkbox"/> Pass, satisfied, standard <input type="checkbox"/> Borderline <input type="checkbox"/> Poor, failed
<b>Milestone evaluated:</b> <input type="checkbox"/> M1 <input type="checkbox"/> M2 <input type="checkbox"/> M3	<b>Suitability for milestone</b> <input type="checkbox"/> Appropriate <input type="checkbox"/> No, too easy <input type="checkbox"/> No, too difficult	
<b>Staff's feedback</b>		<b>Staff/Assessor's Name &amp; signature</b>  Date of review: .....

<b>Multi-Source Feedback (MSF)</b> <i>By the Royal College of Psychiatrists of Thailand</i>				<b>ID No. of resident:</b>				
<b>Points for Observation: Leadership skills and professional manner</b>				<b>Name of resident:</b>				
<b>EPA12: Leading and coordination team</b>								
<b>Date of meeting:</b> <input type="checkbox"/> Not applicable								
Competencies	Setting	<input type="checkbox"/> 360° performance appraisal		Level of performance				
	<input type="checkbox"/> Rehab ward round <input type="checkbox"/> Rehab team meeting/conference <input type="checkbox"/> Patient and family meeting <input type="checkbox"/> Business meeting (HA/PCT; QA)	<input type="checkbox"/> MD staff <input type="checkbox"/> PT <input type="checkbox"/> PO <input type="checkbox"/> SW	<input type="checkbox"/> Nurse <input type="checkbox"/> OT <input type="checkbox"/> ST <input type="checkbox"/> Resident year ....	Not applicable	Not done	Unsatisfactory	Satisfactory	Superior
PC5 ICS5	1. Organizing the meeting/mission จัดการเตรียมความพร้อมก่อนการประชุม							
	2. Conducting the meeting/mission <i>Efficiently with friendly atmosphere</i> ดำเนินการประชุมอย่างมีประสิทธิภาพด้วยบรรยากาศที่เป็นมิตร							
PF2	3. Listening with attention to opinions from others ตั้งใจฟังความเห็นของคนอื่น <i>Patient and family members, the PCT, colleagues, committee members</i>							
	4. Accepting difference/perspectives of others ยอมรับความเห็นและมุมมองที่แตกต่าง							
	5. Tolerating consistent review/challenge of ideas อดทนต่อความคิดที่ท้าทายและการถูกประเมินอย่างสม่ำเสมอ							
PLI1 ICS2-5 PF5 SBP1,3	6. Providing relevant and adequate information/opinions ให้สารสนเทศ/ความเห็นที่เกี่ยวข้องและพอเพียงโดยอิงหลักฐานจริง งานวิจัย ระบบสุขภาพ กฎหมาย <i>Facts, EBM, critical appraisal, healthcare system/policy, laws, etc.</i>							
MKS2 ICS5	7. Making decision ตัดสินใจอย่างเป็นธรรมโดยคำนึงปัจจัยรอบด้านของผู้ป่วย Medical condition; preference, needs/expectation; QoL/functioning; contextual factors							
PC6 ICS4,5 PF1	8. Making the team's mission important, possible to accomplish ทำให้พันธกิจของทีมสำคัญ บรรลุได้ และนำขึ้นต้น							
	9. Making people in the team feel capable of performing their roles ทำให้คนในทีมเห็นศักยภาพที่จะปฏิบัติตามบทบาทของตนเองได้							
PF2-4	10. Showing courage, persistence and commitment แสดงความกล้า ความมั่นคง และความมุ่งมั่น							
	11. Possessing personal identity and integrity แสดงตัวตนและมีความซื่อสัตย์มีคุณธรรม							
	12. Being <i>trusted and believed</i> by others เป็นคนที่คนอื่นไว้วางใจและเชื่อถือ <i>PCT, colleagues, patients and family members, committee members</i>							
	13. Accepting team's core values and being a role model ยอมรับค่านิยมของทีม และเป็นคนต้นแบบ							
	14. Forming new values, attitude and perspectives of others สร้างค่านิยมใหม่, ทักษะคิด และมุมมองใหม่ ให้คนอื่น							
<b>Resident's reflection on his/her performance</b>								
<b>Staff's evaluation summary</b>				<b>Overall actual performance</b>				
<b>Milestone evaluated</b> <input type="checkbox"/> M1 <input type="checkbox"/> M2 <input type="checkbox"/> M3	<b>Suitability for milestone</b> <input type="checkbox"/> Appropriate <input type="checkbox"/> No, too easy <input type="checkbox"/> No, too difficult	<b>Time used</b> <input type="checkbox"/> Appropriate <input type="checkbox"/> Not Appropriate	<input type="checkbox"/> Good, above standard <input type="checkbox"/> Pass, satisfied, standard <input type="checkbox"/> Borderline <input type="checkbox"/> Poor, Failed					
<b>Staff's feedback</b>				<b>Staff/Assessor's Name &amp; Signature</b>				
				Date of evaluation: .....				

Previously 'leading team/meeting'; Version 1.1, revised 08/07/2021

Note: When using this form for 360° performance appraisal, no need to provide name &amp; signature of assessor

<b>Research Critical Appraisal (RCA)</b> <i>By the Royal College of Psychiatrists of Thailand</i>			<b>ID No. of resident:</b>				
<b>Points for Observation:</b> <i>Critical appraisal</i>			<b>Name of resident:</b>				
<b>EPA13: Conducting a Research in Medical Rehabilitation</b>							
<b>Date of presentation:</b>							
<b>Type of article</b> <input type="checkbox"/> Observational study <input type="checkbox"/> Clinical trial <input type="checkbox"/> Review <input type="checkbox"/> Meta-analysis			<b>Level of performance</b>				
<b>Title of article</b>			<b>Not applicable</b>	<b>Not done</b>	<b>Unsatisfactory</b>	<b>Satisfactory</b>	<b>Superior</b>
<b>1. Critical appraisal:</b>							
1.1 Subjects: <i>representing the target population focused</i>							
1.2 Study subjects: <i>selected or invited, inclusion-exclusion criteria</i>							
1.3 Recruitment: <i>acceptable way</i>							
1.4 Sample size: <i>calculated, adequate for analysis</i>							
1.5 Randomization: <i>flow clearly described, subject-assessor blinding</i>							
1.6 Blinding effects, <i>e.g. minimizing observer bias, bias in analysis, etc.</i>							
1.7 Intervention: <i>clearly described, appropriate, based on systematic reviews</i>							
1.8 Follow-up of subjects, <i>e.g. complete enough, long enough in cohort study</i>							
1.9 Outcome measurement: <i>subjective/objective; valid, reliable; minimizing bias</i>							
1.10 Analysis: <i>appropriate</i>							
1.11 Results analysis: <i>correct, baseline analysis between group, difference explained; appropriate test statistics, e.g. absolute numbers, p values, CI, RR, OR etc.</i>							
1.12 Confounding factors: <i>identified, corrected/controlled</i>							
1.13 Conclusion: <i>justified, linked to the finding, not beyond the data; generalizable; implication to clinical practice</i>							
1.14 Limitations: <i>design, methods, sample size, data validity, statistical analysis</i>							
<b>2. Presentation:</b> <i>Clear, concise, readable, understandable</i>							
<b>Resident's reflection on his/her performance</b>							
<b>Staff's evaluation summary and comment</b>			<b>Overall actual performance</b>				
<b>Milestone evaluated</b> <input type="checkbox"/> M1 <input type="checkbox"/> M2 <input type="checkbox"/> M3	<b>Suitability for milestone</b> <input type="checkbox"/> Appropriate <input type="checkbox"/> No, too easy <input type="checkbox"/> No, too difficult	<b>Time used</b> <input type="checkbox"/> Appropriate <input type="checkbox"/> Not Appropriate	<input type="checkbox"/> Good, above standard <input type="checkbox"/> Pass, satisfied, standard <input type="checkbox"/> Borderline <input type="checkbox"/> Poor, failed				
<b>Staff's feedback</b>			<b>Staff/Assessor's Name &amp; Signature</b>				
			Date of evaluation: .....				



## Summary of WPBA in 13 EPAs

No.	EPA	M1			M2			M3		
		Content	Type	No.	Content	Type	No.	Content	Type	No.
1	MSK pain	Common MSK pain	mini-CEX	1	Neuropathic pain	mini-CEX	1	Complicated pain	CbD	1
		Dry needling/ TrP injection	DOPS	1	Joint/soft tissue injection	DOPS	1			
2	Brain	Simple stroke	mini-CEX	1	Complicated stroke / TBI	mini-CEX	1	Dementia or Parkinson	CbD	1
		IPD Stroke	MDR	3	IPD Stroke	MDR	2			
3	Spinal cord	Neuro exam in TSCI	mini-CEX	1	Cystometry	DOPS	1	Complicated SCI	CbD	1
		IPD/consulted TSCI	MDR	2	UDT report	MDR	1			
					IPD/consulted NTSCI	MDR	2			
4	Pediatrics	CP: Hx & PE	mini-CEX	1	Complicated CP	CbD	1	CP Counseling	mini-CEX	1
		Simple CP	CbD	1						
5	Cardio-vascular/ Pulmonary	Postural drainage & breathing exercise	DOPS	1	Vascular disease	mini-CEX	1	Cardiac disease	CbD	1
					Lymphatic disease	CbD	1			
6	Spasticity	Simple spastic case	CbD	1	Chemo-denervation Common muscle	DOPS	1	Chemo-denervation Uncommon muscle	DOPS	1
7	EDx, NMDs	Peripheral nerve entrapment	DOPS	2	Radiculopathy or plexopathy	DOPS	2	MND, polyneuropathy, NMJ or myopathy	DOPS	2
		EDx report	MDR	2	EDx report	MDR	2	EDx report	MDR	2
8	Prosthesis	Amputee / stump management	mini-CEX	1	Patient care / prosthetic prescription	CbD	1	Check-out / gait deviation	mini-CEX	1
9	Orthosis	Prefabricated orthosis	mini-CEX	1	Custom-made limb orthosis	CbD	1	Custom-made: scoliosis orthosis	CbD	1
10	Foot, shoes	Common foot pain	mini-CEX	1	DM foot	CbD	1	Complicated foot	CbD	1
11	Disability	Disability Certificate	MDR	2	Counselling PWD	mini-CEX	2	Home visit (ICF/CBR)	CbD	1
12	Leading team	360° performance	MSF	2	360° performance	MSF	2	360° performance	MSF	2
		Presentation & discussion	MSF	1				Leading & conducting	MSF	1
13	Research	Research proposal oral presentation	RCA	1	Research approval and progress	IRB Progress	1	Oral presentation & Full manuscript	RCA	1
		Observational/ review article	RCA	2	Clinical trial	RCA	2	Meta Analysis	RCA	1
		Journal club	Attend	8	Journal club	Attend	8	Journal club	Attend	8

Version 1.1, date 08/07/2021



## Competency codes (รหัสสมรรถนะ)

PC	Patient Care	การดูแลรักษาฟื้นฟูผู้ป่วย
PC1	Having diagnostic and differential diagnostic skills.	มีทักษะการซักประวัติตรวจร่างกายวินิจฉัยวินิจฉัยแยกโรคได้อย่างถูกต้องเหมาะสม
PC2	Being able to assess impairment and disability including handicap accurately and appropriately.	มีความสามารถประเมินความบกพร่องความสูญเสียสมรรถภาพและความพิการและหรือความเสียหายเปรียบเทียบทางสังคมได้อย่างถูกต้องเหมาะสม
PC3	Having skills and critical thinking in requesting appropriately special investigations and interpreting laboratory tests correctly.	มีทักษะและวิจารณญาณในการพิจารณาส่งตรวจอย่างเหมาะสมและแปลผลการตรวจทางห้องปฏิบัติการได้อย่างถูกต้อง
PC4	Having skills in performing special investigations in rehabilitation medicine and providing appropriate interpretation.	มีทักษะและความสามารถวางแผนตรวจพิเศษทางเวชศาสตร์ฟื้นฟูและแปลผลได้อย่างถูกต้อง
PC5	Being able to provide rehabilitation services efficiently based on safety of patients including persons with disability as well as rehabilitation personnel.	ให้การบำบัดรักษาฟื้นฟูสมรรถภาพได้อย่างมีประสิทธิภาพโดยคำนึงถึงความปลอดภัยของผู้ป่วยผู้พิการและบุคลากรทางการแพทย์ที่เกี่ยวข้อง
PC6	Having skills in planning and setting goals for comprehensive rehabilitation and interdisciplinary approach.	มีทักษะในการทำงานดูแลรักษาฟื้นฟูผู้ป่วยผู้พิการแบบสหวิทยาการที่กำหนดเป้าหมายในการบำบัดรักษาฟื้นฟูร่วมกันได้
MKS	Medical Knowledge and Skills	ความรู้ความเชี่ยวชาญและความสามารถในการนำไปใช้แก้ปัญหา
MKS1	Having medical knowledge and skills in rehabilitation medicine.	มีความรู้ความสามารถในวิชาชีพและเชี่ยวชาญในสาขาเวชศาสตร์ฟื้นฟู
MKS2	Being able to apply medical science, social science and psychology in order to provide appropriate rehabilitation for patients and persons with disability.	ประยุกต์ใช้วิทยาศาสตร์การแพทย์สังคมวิทยาและจิตวิทยาเพื่อการฟื้นฟูสมรรถภาพผู้ป่วยผู้พิการได้อย่างเหมาะสม
PLI	Practice-based Learning and Self-improvement	การเรียนรู้จากการปฏิบัติและพัฒนาตนเองอย่างต่อเนื่อง
PLI1	Being able to learn and increase experience by one's own practice.	สามารถเรียนรู้และเพิ่มประสบการณ์ได้ด้วยตนเองจากการปฏิบัติ
PLI2	Being able to provide appropriate treatment and rehabilitation therapy based on evidence-based medicine and health related research.	สามารถพิจารณาวิธีการรักษาฟื้นฟูโดยอิงหลักฐานทางวิชาการหรืองานวิจัยทางการแพทย์และสาธารณสุขได้อย่างเหมาะสม
PLI3	Being able to conduct a medical and health research, and critically appraise medical research studies.	สามารถดำเนินการวิจัยทางการแพทย์และสาธารณสุขรวมทั้งสามารถวิพากษ์บทความและงานวิจัยทางการแพทย์ได้

## Competency codes (รหัสสมรรถนะ)

ICS	Interpersonal and Communication Skills	ทักษะปฏิสัมพันธ์และการสื่อสาร
ICS1	Completing medical records according to standards.	บันทึกเวชระเบียนได้ตามมาตรฐาน
ICS2	Presenting patients' data and discussing patients' problems efficiently.	นำเสนอข้อมูลผู้ป่วยและอภิปรายปัญหาอย่างมีประสิทธิภาพ
ICS3	Transferring knowledge and skills to other physicians, students and other related medical personnel.	ถ่ายทอดความรู้และทักษะให้แพทย์ นักศึกษาและบุคลากรทางการแพทย์ในสาขาที่เกี่ยวข้อง
ICS4	Communicating with patients and families correctly and efficiently with kindness and respecting others' decision and esteem.	สื่อสารให้ข้อมูลแก่ผู้ป่วยและครอบครัวได้อย่างถูกต้องและมีประสิทธิภาพโดยมีเมตตา เคารพการตัดสินใจและศักดิ์ศรีของความเป็นมนุษย์
ICS5	Having leadership, good relationship with others, and ability to work efficiently with co-workers at all levels.	มีมนุษยสัมพันธ์ที่ดีมีภาวะผู้นำทำงานกับผู้ร่วมงานทุกระดับอย่างมีประสิทธิภาพ
ICS6	Being a consultant and a counselor for physicians and related rehabilitation professionals.	เป็นที่ปรึกษาและให้คำแนะนำแก่แพทย์และบุคลากรอื่นที่เกี่ยวข้องโดยเฉพาะทางด้านเวชศาสตร์ฟื้นฟู
PF	Professionalism	ความเป็นมืออาชีพ
PF1	Being able to make patients and persons with disability realize of their capacity to achieve their quality of life.	สามารถกระตุ้นให้ผู้ป่วยตระหนักในสมรรถนะของตนเองเพื่อนำไปสู่การพัฒนาคุณภาพชีวิตของผู้ป่วยผู้พิการ
PF2	Having moral, ethical and good attitude towards patients, persons with disability, their families, colleagues, and community.	มีคุณธรรมจริยธรรมและเจตคติที่ดีต่อผู้ป่วยผู้พิการครอบครัวผู้ร่วมงานเพื่อนร่วมวิชาชีพและชุมชน
PF3	Having an interest in continuous professional development to maintain professional standards.	มีความสนใจใฝ่รู้และสามารถพัฒนาไปสู่ความเป็นผู้เชี่ยวชาญต่อเนื่องตลอดชีวิตเพื่อคงไว้ซึ่งมาตรฐานวิชาชีพ
PF4	Having responsibility to work.	มีความรับผิดชอบต่องานที่ได้รับมอบหมาย
PF5	Concerns with social benefits in response of the country's needs.	คำนึงถึงผลประโยชน์ส่วนรวมเพื่อตอบสนองความต้องการของประชาชาติ
SBP	System-based Practice	การปฏิบัติงานให้เข้ากับระบบ
SBP1	Being able to practice according to health system relating with medical rehabilitation and appropriately with the situation.	สามารถปฏิบัติงานให้สอดคล้องกับระบบสาธารณสุขของประเทศในส่วนที่เกี่ยวข้องกับงานเวชกรรมฟื้นฟูและประยุกต์ใช้ให้เหมาะสมตามสถานการณ์
SBP2	Being able to develop quality improvement of rehabilitation services for patients and persons with disability.	สามารถร่วมพัฒนาคุณภาพการดูแลรักษาฟื้นฟูสมรรถภาพผู้ป่วยและคนพิการ
SBP3	Being able to work based on patients' safety, cost-consciousness and efficiency.	สามารถปฏิบัติงานโดยคำนึงถึงความปลอดภัยของผู้ป่วยและใช้ทรัพยากรได้อย่างเหมาะสมและมีประสิทธิภาพ