Total Hip Replacement – Assessment format

Name: Age/Sex:
Occupation:
OPD No:
Address:

1. **Patients brief Summary:**
    a. **Chief complaints**
    b. **Surgical History - type (cemented /Non cemented) / implant / surgical approach)**
    c. **Co morbidities**
2. **Observation**
    a. General – (whole body appearance)
    b. Local – Surgical Incision, Swelling, Colour
    c. Presence of drain tubes *
    d. Position of limb comfort adaptation *
    e. Posture
3. **Examination**
    a. Pain
    b. FLAGs
    c. Limb Oedema
    d. AJROM
        i. Hip (with special precautions as per guidelines)
            a. Combined movement - Hip Flexion with knee flexion (heel drags)
            b. Abd / Ext / Medial and Lateral Rotation
        ii. Knee (Flex and Extension – Short arc / High sitting)
        iii. Ankle (DF/PF)
    e. PJROM (Hip / Knee and Ankle) - (with special precautions as per guidelines)
        i. End feel
        ii. List the structures limiting the movements
    f. Strength (MMT)
    g. Isometric Resisted Test*
    h. Combined movement (Functional) – Hip and knee – Performed in supine, standing and sitting (with special precautions based on surgical approach – eg Avoid Hip Adduction + IR + Flex).
    i. PSFS (patient specific functional scale)
    j. Balance (Relate with the possible factors (ageing / proprioception / strength)
    k. Functional Movement analysis (relate with normal pattern, identify the possible structure)

I. Gait Analysis
   i. Function / Gait status – Level of independence*

Note: *Performed on In-patients

4. ICF

ICF domain	Assessment summary
Body structure	- Structure (Lower limb & Upper limb) related to movement - Musculoskeletal structure related to movement. (Swelling /effusion /scar/ Muscle wasting/ Hip&Knee / Bony alignments)
Body function	- Sensation of pain - Mobility of Hip joint - Stability of Hip - Muscle power - Muscle endurance - Gait pattern
Activity & Participation	- Walking - Moving around - Using transportation - Driving - Washing - bath / Toileting - Dressing - Doing housework - Intimate relationships - Community Life - Activities at work - Recreation and leisure
Environment	- Immediate family - Products and technology for personal use in daily living - Construction and building and technology of buildings for public use

5. Summary of findings
6. Functional Diagnosis / areas of concern
7. Goals (SMART)
8. Plan of care

Clinical Reasoning

	Clinical relevance / contributing factors / Hypothesis / Reasoning	**Important Information**	Special attention
Age	Healing / degenerative changes / balance / strength / mobility		
Chief Complaints	List the reported symptoms (Pain, Mobility, ADLs etc.,)	- Relate with surgery/procedure - Identify Flags	
Surgical history and comorbidities	Reason for surgery Surgical History – Incision (approach) / type of implant (cemented / non cemented , Bipolar/ unipolar) Relevant medical conditions Relevant Past history (Body Function status / contributing factors that may influence the exercise planning)	HT/IHD/DM/ osteoporosis Previous Functional status Assisted devices used for supports, transfers and mobility	
Observation	General – (whole body appearance)	BMI To understand obesity / overweight contributing to OA and Joint loading	
	Local – Surgical Incision, Swelling, Colour Presence of drain tubes	Healing (stages-inflammatory/ remodelling etc.,) Scar (grading)	
	Attitude of Limb (supine/standing) Posture	Hip Valgus / Varus / knee FFD / Valgus / Varus / Tibia position / Patella position	
Examination	Pain (identity FLAGs, relate to surgical history, tissue healing, medication)	Type , Intensity , duration and frequency	Referrals
	AJROM **Hip** (with special precautions as per	Movement pattern, quantity, muscle activity, kinematics,	Perform in supine and sitting to

	guidelines) - Combined movement - Hip Flexion with knee flexion (heel drags) - Abd / Ext / Medial and Lateral Rotation **Knee**(Flex and Extension – Short arc / High sitting) **Ankle**(DF/PF)	protective mechanism) Identify - Lag - Muscle inhibition - Muscle power Note : Normally immediately after surgery , patient may not be able to perform Hip movements due to pain / inhibition / surgical incision (as it requires to generate a greater amount of torque to produce movements)	evaluate the muscle activity (torque) Avoid Active SLR in the 1st phase of post-op (0-2 weeks)
	PJROM (Hip / Knee and Ankle) - (with special precautions as per guidelines) - End feel - List the structures limiting the movements	Quantity, end feel	
	Strength (MMT)* 1RM / 10RM after 3 weeks	Hip (with special precaution and guidelines) Knee - Quadriceps Hamstrings Ankle muscles	
	Combined movement (Functional) – Hip and knee – Performed in supine, standing and sitting. (within the range as per THR guidelines)	Pattern and contribution to joint range and muscle activity	
	PSFS (patient specific functional scale)	Identify the functional limitation	Set patient specific goals
	Balance Relate with the possible factors (ageing / proprioception / strength)	Sitting / standing / perturbation	Balance tests
	Functional Movement analysis (relate with normal pattern, identify the possible	- Lying to side lying / sitting - Sit to stand - Walking - Stair climbing	

	structure)	- Running (if applicable) Stepping (normal / over obstacles)	
	Gait Analysis	Kinematic / Temporal / spatial parameters	
	Function / Gait status – Level of independence	Total assist/ max/mod/min assist /Independent Movement pattern at knee (available flexion) Distance walked (observe for discomfort during function and gait)	

ICF

ICF domain	Assessment summary	Measurement used
Body structure	- Structure (Lower limb & Upper limb) related to movement - Musculoskeletal structure related to movement. (Swelling /effusion /scar/ Muscle wasting/ Hip&Knee / Bony alignments)	
Body function	- Sensation of pain - Mobility of Hip joint - Stability of Hip - Muscle power - Muscle endurance - Gait pattern	- Sensory evaluation - JROM - Postural control – sway / standing on uneven surface
Activity & Participation	- Walking - Moving around - Using transportation - Driving - Washing - bath / Toileting - Dressing - Doing housework - Intimate relationships - Community Life	

	- Activities at work - Recreation and leisure	
Environment	- Immediate family - Products and technology for personal use in daily living - Construction and building and technology of buildings for public use	

PT Plan of care

Pre- op / Prehabilitation –

Mode	Reasoning
Exercise counselling	Gain confidence
Upper limb exercise	Assistance in mobility / crutches
Stretching exercises	Hip Flexors/ illiopsoas(Avoid in case of Hip fractures posted for THR) hamstrings / calf
Exercises to Hip / Knee and ankle	Activation and training for Quads/ hams/ Hip Abd / Extensors / Calf muscles (aid in re-education during inhibition after surgery)
Functional education and training	

Post op

Treatment	Reasoning / Progression	Progress note
Gain confidence	Exercise education	
Decrease Pain - Cryotherapy	Understand the underlying causes of pain - Inflammatory	Pain rating (VAS / NPRS), quality and compliance at each

- Positioning (as per the surgical approach) - Muscle activation (active exercise / isometric exercises)	- Chronic - Structural - Muscle guarding - Effusion <u>Modalities</u> - TENS - Cryotherapy (once in every 6 hours till 3rd post op day)	visit.
Oedema control	- Compression (lower limb – crepe / elastic stockings) - Elevation - ST mobilization (If required)	- Active exercises with elevation - Activity modification (elevation in between with active exercises)
Restore ROM **Active extension without lag** Note: ROM returning to prior level. If they had contracture, they are more likely to have in post op	Increase Range of motion Identify the end feel **AROM** – Identify active structure function (Activation/ Inhibition) IF inhibited start with facilitation techniques (FES / Isometric exercise) **Stretching** Use techniquesbasedon examination& reasoning - Passive structure tightness (use static stretching) - Active structure shortening (use PNF techniques) - Quadriceps sets - Assisted Straight leg raise (SLR) - <45 degrees - Supine heel slides (<45 degrees) - Short arc Knee Extension - Resisted exercises (minimal weights / 30% RM) in available range to knee joint - Controlled flexion and extension in high Sitting (support if required)	Increasing each visit (10-15 days) towardsachieving range at hip and knee Functional movements at hip restricted to <90 in flexion and forward bending in standing

	- Static cycle / pedo cycle (with precaution) Modalities Electrical Stimulation for Quads if required	
Safe transfers and ambulation with assistive device	Distance Observe and train use of Hip and knee flexion / Extension during gait	Increase incrementally at each visit (10%) Add functional training for lower limb (sit to stand, stepping, stair climbing, over obstacles)
Prevention of Tightness and Contracture Skin / Incisional scar ST – Patellar tendon Joint - PF joint / Capsule	Positioning (wedge abduction pillow) Active exercises during sitting Stretching exercises ST mobilization / scar mobilization	Progress to stretching exercises and ST mobilization if tightness of structures are identified
Gait training / Mobility	Weight bearing as tolerated (WBAT) – (walker / crutches/ canes) Weight bearing planned as per the surgical procedure	Progress to - Normal gait without assistive device - Stair climbing - Gait obstacles
Home exercise program (HEP)		

Progress Notes

Total Hip Replacement – Assessment format

Components	0- 2 weeks	3-6 weeks	6-12 weeks
Exercise education	- Emphasis on Importance of Exercise - Provide education on "hurt (vs) harm	- Emphasis on Importance of strength,control, balance and function	- Emphasis on precautions and preventive measures
			-
Pain	- Cryotherapy - Positioning - Muscle activation (active exercise / isometric exercises) Pain must decrease gradually after 24 – 48 hours, indicate if there is increase. Observe for pain pattern during movements. Educate about pain, during exercise	Pain must decrease during rest at this stage. Pain during movement must be identified and patient must be given exercise education.	- Pain must decrease at this stage. - Identify pain due to fatigue, educate patient appropriately - Identify structures causing pain (possibly due to tight structure)
Oedema	- Compression - Elevation - ST mobilization (If required)	- ST mobilization - Active exercises of knee with elevation.	Usually minimal or no swelling at this stage.
Modalities (Pain and oedema management)	- TENS if required (VAS >6) - Cryotherapy (once in every 6 hours till 3rd post op day if pain and swelling) - Electrical Stimulation (ES) – if Quadriceps inhibition	- ES (if required)	- Moist heat if pain and stiffness persists

Restore ROM	**Active assisted Exercises (AAROM)** - of hip in all planes (within the restriction) Identify active structures limiting ROM and function (Activation/ Inhibition) IF inhibited start with facilitation techniques (FES / Isometric exercise) **AJROM** - Progress with minimal pattern substitution. - Progress from movement eliminating gravity to movement against gravity **Achieve 0 degrees active extension without lag at knee in high sitting.** **PJROM – Gentle** with analysing the end feel of Hip in all planes. (consider the precautions to avoid IR /Add and Flexion) **Exercises** - Isometric Hip flexion, extension, abduction, adduction, IR and ER - Quadriceps sets	JROM – normalised (active / passive) If not achieved continue exercise as 2 weeks AJROM exercises to Hip / knee and ankle progress to resistance (focus on Hip abduction - standing and side lying) - Stationary cycle (10-15 minutes) - Functional movement exercises (lower limb activities / ADLs/ dressing) Exercises - High sitting exercises (knee extension and flexion) with weights - Hip (weights at thigh) - Stand to sit / bed transfer training - Balance and Proprioception training - Gait / movement/ balance /weight transfers) - Standing balance training - Progress to weight bearing in affected leg standing and unaffected without trendelenburg sign - Add functional training in single plane for lower limb (with support if required) (sit to stand, stepping over obstacles)	- If good control of movement in single plane start with multi-planar weight bearing activities - Resistance exercises with increased weights - Multi-planar activities and exercises - Functional movements in different plane and in combinations - Exercises to improve ADLS - Proprioception training - Lateral and multidirectional movements with increase in intensity

	(short arc progress to long arc (high sitting)) - Active hip abduction/ flexion/ extension in standing with controlled movement. (with assistance/support) - Progress to movements in the affected side with weight bearing in the affected limb - Supine heel slides (<45), - Resisted exercises (minimal weights / 30% RM) in available range to knee joint extension Note: ROM returning to prior level. If they had contracture, they are more likely to have in post op		
Safe transfers and ambulation	Weight transfers – sitting and standing Balance exercises (sitting and standing with support) Pre Gait training – (standing with support) Static marching, side stepping, static high stepping) Avoid –	- Increasedistance incrementally at each visit (10%) – Full Weight bearing with minimal support - progress to NO support. - Attain normal kinematics and weight bearing - Temporal and Spatial parameters of gait normalization and training - Stair stepping up	- Normal gait without assistive device - Stairs with reciprocal gait for without support - Independent transfers to and from the bed/ ground - Independent function (BADLS)

	trendelenburg gait or pattern (train using hip muscle during gait through feedback) Normalize gait with assistive device. Dependent upon previous functional level before THR. With assistive device - Distance at patients comfort Weight bearing as tolerated (WBAT) – (walker / crutches/ canes) increase incrementally day by day (based on evaluation) - Observe and train use of Hip and Knee flexion during gait Transition to 1 crutch or use of cane and begin walking short distances. Without assistive device at the end of 4-6 weeks	and down training (with assistance progress to minimal support)	
Tightness and Contracture	Positioning Active exercises during lying / sitting ST mobilization / incisional scar mobilization	Passive exercise within the limit and guidelines – AVOID forced stretching	ST mobilization Stretching (sustained - static) to identified muscles
Home exercise program (HEP)	HEP written based on patient goals with special precautions	HEP written based on patient goals with special precautions	HEP written based on patient goals with multi-planar exercises and functional movements with dos and don'ts

Precautions	- Watch incision for signs of separation and/or infection. - Protection of the post-surgical hip WBAT - AVOID - beyond patient limits during exercises - Precautions (Flexion <90º, no internal rotation or adduction past midline	- PROM to be achieved within limit or with minimal force (NO forced passive movements) - Avoid high impact exercise - Avoid rapid force during Gait and functional movements (sit to stand etc.,) - Incision/ infection issues / scar - Avoid multi-planar weight bearing activities and exercises	- No impact activities - Special precaution in multi-planar activities - Gradual increase in lifting weights during functional activities – caution on "do and donts"
Progression criteria	- Improvement in ROM, muscle function and gait over the first 2 weeks.	- Improvement in ROM - Improvement in Hip Abductor and quadriceps function, gait and activity tolerance - Single crutch or a cane - Walking short distances without anassistive device. - Non-antalgic or trendelenburg gait pattern	- Good control (joint and movement) - Improvement in muscle strength and endurance - Achievement of ROM 0-90 hip flexion - No extensor lag - Walking without assistance and stair climbing
Discharge summary	Knee range – achieves as previous or as the unaffected side degrees achieved Gait – 50 meters with support	Hip range (combined movement achieved) Gait – 100 meters with minimum support Short distance – without support (10 -50meters) Stair climbing minimum 5 steps up and down HEP – adherence	Gait – Out door mobility with support (cane /tripod) Gait without support in even surface HEP – adherence

Note	- If goals are NOT achieved refer to Physical Medicine and Rehabilitation centre (PMRC) -JSSH for further evaluation and rehabilitation.