**NMTRG Guidelines for the assessment and rehabilitation of the Complex Lower Limb injury in a Major Trauma patient**

| **Discipline: Occupational Therapy and Physiotherapy** |
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| **Complex Lower Limb injury Physiotherapy and Occupational Therapy Rehabilitation Guideline** |
| The PT/OT should have a working knowledge of:   * Lower limb anatomy and biomechanics * Fracture healing * Lower limb nervous and vascular system * Lower limb reconstruction surgery techniques including limb lengthening, bone transportation, & deformity correctional procedures * Surgery including plastics involvement e.g. grafts and flaps * Rehabilitation expectations * Spanning knee frames/ tibial frames/ tibial frames with footplate |
| The Physiotherapist and the Occupational Therapist should be able to complete basic limb observations to include the following:   * Capillary Refill * Pulses * Motor activity and grading with a standardised measure * Sensory testing * Palpation * Passive muscle stretch * Be able to escalate concerns where additional injuries are suspected |
| The Physiotherapist and Occupational Therapist should be able to identify problems as a result of fractures/surgery and escalate if required:   * Swelling * Fracture blisters * Limb swelling * Infection * Circulation compromise * Wound/dressing issues (including PICO/negative pressure dressing) * Compartment Syndrome * Sensory changes * Motor changes * Internal degloving * Understanding rhabdomyolysis |
| Understand the rationale for use and identify problems with   * Thomas / Kendrick splint * Braun frame * Traction (skeletal & skin) |
| Demonstrate knowledge of common orthopaedic surgery:   * ORIF * External Fixator * Ilizarov/TSF * DHS / Cannulated hip screws / hemi arthroplasty / total hip replacements * Distal femoral replacements * Inter medullary fixation * K-Wire fixation |
| To be aware of the local hip precautions / consultant preferences for a fractured neck of femur (NOF) and adhere to the national guidelines and any local best practice tariff (BPT) for this group |
| Demonstrate awareness of common post-operative complications, how to identify them, how to escalate and when safe to continue therapy:   * Compartment Syndrome * Deep Vein Thrombosis (DVT) * Cardiovascular instability * Low Hb * Pulmonary Embolus (PE) * Fat emboli * Wound infection/dehiscing * Nerve injury/palsy * Delirium * Intracranial pathologies post-operative * Acknowledgement of other soft tissue or bony injuries |
| To be aware of potential modalities to assist muscle and joint range of motion:   * CPM * Splinting * Exercise therapy * Soft tissue techniques * Understanding analgesia |
| To be able to complete:   * A comprehensive assessment of the lower limb (physical, sensory, cognitive and psychosocial as per NICE Guidelines) * Devise a patient centred appropriate treatment plan and goals * Progress and amend as required |
| To be able to understand rationale for, bespoke and off the shelf equipment ,application, adjustment and education for patient/carer on the use of:   * Hip dislocation brace * Cricket pad splint * Hinged knee brace * Dynamic PCL brace * Walking / rigid / fixed walker boot * Offloader shoe / plaster shoe * AFO * Speed brace * Foot up splint * Dorsiwedge * Foot drop splints (bespoke and off-shelf) |
| To demonstrate awareness of varying weight bearing restrictions and appropriate:   * walking aid selection * transfer aids(banana board, sara stedy, Re-Turn, ETAC & hoist) * mobility progression * maximisation of outcomeand independence * Environmental/equipment needs for discharge |
| Be aware of common issues around daily life with an external fixator/frame and advise the patient accordingly (please see the lower limb reconstruction guideline for in depth information)   * Personal care * Dressing * Functional tasks * Mobility/Transportation * Body image/psychological acceptance |
| Demonstrate knowledge of the professionals available to input care into patients with complex lower limb injury   * Specialist nurse * District nurse * Orthotics * Plaster technician * Prosthetics |
| Understand the indications for wheelchair assessment and be able to educate patient/carer on the following:   * Wheelchair set up * Self-propelling (where able) * Access to a vehicle |
| With regards to plastics surgery, to be able to do the following:   * Administer the free flap dangling protocol for the lower limb and educate others * Understand the potential psychological impact to the patient and refer onto psychology * Understand when to escalate any concerns |
| Be able to identify and refer on for:   * Provision of longer term rehabilitation needs (including vocation & education) and educate patient/carer around these |
| If required the patient has access to:   * Outpatient MSK rehab within two weeks of discharge * Community therapy within a week of hospital discharge * Community psychology * long term access to pain services |

**References and Further Reading**