1.0 Policy Statement........................................................................................................ 2
2.0 Purpose.......................................................................................................................... 2
3.0 Scope.................................................................................................................................. 2
4.0 Health & Safety ............................................................................................................. 2
5.0 Responsibilities............................................................................................................... 2
6.0 Definitions and Abbreviations ..................................................................................... 3
7.0 Guideline........................................................................................................................ 3
7.1 Pre-Operative................................................................................................................. 3
7.2 Post-Operative................................................................................................................. 3
  7.2.1 Day 1......................................................................................................................... 3
  7.2.2 Day 2......................................................................................................................... 4
  7.2.3 Day 3 onwards......................................................................................................... 4
  7.2.4 Discharge Criteria.................................................................................................... 5
  7.2.5 2 Weeks - 6 Months................................................................................................. 5
  7.2.6 6 Months.................................................................................................................. 5
8.0 Related Documents....................................................................................................... 5
9.0 Appendices.................................................................................................................... 5
10.0 References.................................................................................................................... 5
1.0 Policy Statement

1.1 It is the policy of Cappagh National Orthopaedic Hospital to provide a patient focused physiotherapy service delivered by chartered physiotherapists and support staff working in a well-equipped environment.

1.2 It is the policy of Cappagh National Orthopaedic Hospital to provide health professionals and the public with the necessary advice and guidance on physiotherapy rehabilitation.

2.0 Purpose

2.1 The purpose of this guideline is to advise health professionals and patients on the physiotherapy rehabilitation of a person undergoing limb lengthening.

3.0 Scope

3.1 This guideline applies to all staff involved in the care of a person undergoing limb lengthening, community staff involved in the pre and post-operative care of the patient, the patient and their family.

4.0 Health & Safety

4.1 There are health and safety risks involved in patient care, namely risk of physical injury to patient and staff, risk of infection.

4.2 Physiotherapists have the necessary qualifications and clinical experience to carry out this guideline and to supervise unqualified support staff.

4.3 They must be eligible for membership of their professional body, the Irish Society of Chartered Physiotherapists (ISCP).

4.4 They undertake mandatory manual handling, basic life support training, fire safety, infection prevention and control and risk management.

4.5 They complete a minimum of 100 hours continuing professional development every three years as required by the ISCP.

5.0 Responsibilities

5.1 It is the responsibility of physiotherapists to implement this guideline.
6.0 Definitions and Abbreviations
Limb lengthening refers to a procedure where a long bone is surgically cut and the bone ends pulled apart in a controlled manner to create length in the bone.

External metal fixation around the bone ends ensures that the limb is held in a stable position during this process.

Indications for this type of surgery include:
- Congenitally short limbs
- Shortened femur or tibia on one side due to injury, leading to leg length discrepancy

7.0 Guideline
7.1 Pre-Operative
7.1.1 Patients should be evaluated prior to surgery, including:
7.1.1.1 Assessment of joint range of motion, muscle strength, mobility and general function.
7.1.1.2 Respiratory assessment and treatment if necessary.
7.1.1.3 Explanation of post-operative physiotherapy management, including respiratory and circulatory exercises.
7.1.1.4 Teaching independent bed mobility and transfers.
7.1.1.5 Pre-operative exercise/activity programme.
7.1.1.6 Education - pre-operative education can reduce anxiety and improve post-operative outcomes, especially with respect to pain, functioning and length of hospital stay (McDonald et al, 2007).

7.2 Post-Operative
An external fixator is applied to the affected limb and the bone is cut. After 7 days the lengthening process begins - screws above and below the cut are turned three times per day (quarter turn each time) until the desired bone length is achieved. The fixator remains in place for a further 3-6 months, until there is radiographic evidence of solid bone formation in the gap between the bone ends

7.2.1 Day 1
7.2.1.1 Review operation notes and post-operative physiotherapy instructions.
7.2.1.2 Assess respiratory status and treat if necessary.
7.2.1.3 Encourage circulatory exercises, isometric quadriceps and gluteal exercises.

7.2.1.4 Encourage bed mobility

7.2.1.5 Positioning in the bed for comfort.

7.2.1.6 Range of movement exercises for ankles, knees and hips.

7.2.1.7 Stand out of bed and short walk as able NON WEIGHT BEARING.

7.2.1.8 Sitting in a chair as able

7.2.2 Day 2

7.2.2.1 Encourage independent mobility non weight bearing with crutches.

7.2.2.2 Encourage full stretches of the muscle groups around the fixator and full range of the joints above and below the fixator.

7.2.3 Day 3 onwards

7.2.3.1 Lengthening begins.

7.2.3.2 Aim to maintain full joint range and muscle length of the affected limb throughout the lengthening process, although it is common for range and length to be reduced as the bone lengthens.

7.2.3.3 This process can be frightening, especially for younger children. It is important that they are given adequate and appropriate pain medication. It is also helpful if they are supported during their physiotherapy sessions by a family member who understands the importance of maintaining joint range and muscle length.
7.2.4 Discharge Criteria
7.2.4.1 Pain adequately controlled.
7.2.4.2 Independently mobile with crutches.
7.2.4.3 Independent with home exercise programme – assistance with stretches will be required.
7.2.4.4 Out patient follow up organised at least weekly or more often if necessary, until fixator removed.

7.2.5 2 Weeks - 6 Months
7.2.5.1 Maintain muscle strength of the affected limb.
7.2.5.2 Gait re-education as weight bearing increases from non weight bearing through to full weight bearing with crutches.
7.2.5.3 Include open and closed chain exercises as patient progresses to full weight bearing.
7.2.5.4 Review posture as lengthening progresses and maintain correct pelvic tilt.
7.2.5.5 Flexibility and strengthening exercises for other leg and arms - should devise different games to make the process more enjoyable.

7.2.6 6 Months
7.2.6.1 Fixator removed.
7.2.6.2 Gait re-education.
7.2.6.3 Encourage return to full function.

8.0 Related Documents
Individual Physio tools exercise sheets

9.0 Appendices
N/A

10.0 References

This is a controlled document and is intended to be viewed via Q-Pulse therefore printed hardcopies expire within 24 hours from 17:52:52, 12/12/2012