

General Commissioning Statement

Treatment	Elective use of the Ilizarov technique/Taylor Spatial Frame (TSF)
For the treatment of	Non-union/mal-union of bones, shortened limb, long bone deformities
Background	<p>This commissioning policy is needed to clarify under which circumstances the elective use of the Ilizarov technique is commissioned.</p> <p>The appropriate use of Ilizarov frames in non-elective traumatic injury is routinely commissioned and complex cases requiring specialist treatment are commissioned by NHS England¹.</p>
Commissioning position	<p>NHS Hull CCG commissions the use of the Ilizarov technique/TSFs for routine elective use in orthopaedics in:</p> <ul style="list-style-type: none"> • individual carefully selected cases, • where there is agreement by the regional orthopaedic MDT that of all available treatments, Ilizarov/TSF is the best clinical option for the patient in terms of a favourable functional limb outcome (bone and functional outcomes are not always the same). • the patient understands the long duration of external fixation, the likelihood of marked discomfort and possible complications • the patient has been a non-smoker for at least 4 weeks* • Ideally, the MDT should comprise at least two consultant orthopaedic surgeons, with input from specialist nursing, physiotherapy and musculoskeletal radiology. <p><i>* Smoking is a significant, potentially remediable risk factor for failure following Ilizarov reconstruction (see below)</i></p> <p>Cases that will be routinely commissioned after approval by the MDT include the following:</p> <ul style="list-style-type: none"> • Complex mal-union or non-union of fractures (after at least 6 months duration or 9 months where the 'Exogen' ultrasound bone healing system has been tried and failed²). • Bone deformity (affecting the leg/knee/ankle), including limb length discrepancy, that has resulted in chronic pain and/or difficulty walking and/or an increased risk of developing osteoarthritis³. <p>The use of the Ilizarov technique will be routinely commissioned subject to patients meeting the clinical criteria above, which will be ascertained by retrospective audit.</p>

	<p>Requests to use the Ilizarov technique outside these criteria must be submitted to the Hull CCG Individual Funding Request Panel (IFR) for consideration. Requests must include documented minutes from the MDT meeting at which the individual case was discussed.</p> <ul style="list-style-type: none"> • The use of the Ilizarov technique will not be commissioned where limb lengthening alone is the desired outcome as this would be deemed cosmetic and not medically necessary
Effective from	September 2015
Summary of evidence / rationale	<p>The Ilizarov technique is a method of bone fixation using an external fixator (e.g. the Ilizarov fixator or the Taylor Spatial Frame) for lengthening limbs, correcting deformities, and assisting the healing of otherwise hopeless traumatic or pathological fractures and infections. The TSF fixator is a computer software-controlled circular external fixator using six struts, allowing correction of lower limb deformities, fractures and limb lengthening with great accuracy⁴. The main drawback with this technique is the long duration of external fixation required with marked patient discomfort, thus good patient understanding and compliance is required.</p> <p>Studies of clinical and cost effectiveness quoted in the literature are diverse in their quality, findings, patient numbers and statistical power. However, the high complication rate reported in the earlier years of this technique (used in Western countries since the 1980s) has now reduced dramatically, in particular, the incidence of pin site infection, which can now be minimised with specialist care and preventative measures^{5, 6}.</p> <p><i>Non-union cases:</i> ^{7- 11}</p> <ul style="list-style-type: none"> • The Ilizarov technique appears useful in the management of non-union of the long bones when internal devices have failed, though outcome results are varied • Infected non-unions have a higher risk of failure than non- infected cases so the bone infection should be treated first. • Outcomes appear to worsen with the more previous operations the patient has had • Complications appear more frequent in lower leg non-union than in the femur or upper arm. Residual pain and secondary surgery are a frequent complication of tibial non-unions • When bony union is achieved after Ilizarov the scores for bone function and the overall physical and mental health scores of the patient improves • The greatest improvements may be seen 6-12 months after frame removal

	<ul style="list-style-type: none"> • Early removal of the Ilizarov external fixation frame and replacement with internal fixation after bone graft appears to produce no difference in functional outcome on follow up of tibial non-union <p><i>Leg length discrepancy¹² (not routinely commissioned):</i></p> <ul style="list-style-type: none"> • Limb-length discrepancies greater than 2cm often result in pelvic slanting, scoliosis, alterations in normal walking pattern and abnormal loading of the hip and knee joints on the long side, with the attendant risks of premature arthrosis • Speedier tibial lengthening may be achieved by using the Ilizarov fixator in conjunction with secondary internal fixation. • The greater the leg length discrepancy the higher the risk for complications <p><i>Risk factors:</i></p> <p>Smoking is a significant, potentially remediable risk factor for failure following Ilizarov reconstruction, and where possible, cessation strategies are of paramount importance prior to initiating treatment ¹³. Thus, careful patient selection is important for determining the likelihood of success with Ilizarov especially regarding factors such as:</p> <ul style="list-style-type: none"> • Smoking status • Length of bone defect • Presence of infection • Time from original trauma • Number of previous operations • The particular bone affected <p>All patients should understand the long duration of external fixation, the likelihood of marked patient discomfort and possible complications. Thus good patient understanding and compliance is paramount.</p>
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