SCHEDULE 2 – THE VIRTUAL FRACTURE CLINIC SERVICE

VERSION 2

A. Service Specifications

<table>
<thead>
<tr>
<th>Service</th>
<th>Virtual Fracture Clinic (VFC)</th>
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</thead>
<tbody>
<tr>
<td>Provider Lead</td>
<td>James Gibbs (Orthopaedic Consultant) Lucy Cassidy (Advanced Practice Physiotherapist)</td>
</tr>
<tr>
<td>Period</td>
<td>Launch September 2013 - Ongoing</td>
</tr>
<tr>
<td>Date of Review</td>
<td>Version 1: 10/10/2014 Version 2: 20/06/2016</td>
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</table>

1. Population Needs

1.1 National/local context and evidence-base

This was a clinically driven service change due to below factors:

All patients with acute fractures and significant soft tissue injuries have traditionally been managed in temporary plasters (if immobilisation is required) and referred to a fracture clinic soon after injury.

This results in:

- A second visit to hospital, in quick succession, to a generic fracture clinic to be placed in a definitive management device such as a black boot for ankle fractures, with often no further information being provided to the patient or GP on how to best manage their acute injury and prevent secondary complications such as stiffness.
- This sub-speciality management having knock-on effects with regard to the variation of advice given to patients, with no standardised best practice protocols.
- Potential increased follow-up appointments and subsequent imaging, due to more junior staff making initial clinical management plans.
- An increase in waiting times for elective patients.
- Socioeconomic costs of repeated unnecessary attendance.
- Increased administration time for notes to be tracked back to fracture clinic and staffing required.

A collaboration between Orthopaedic and Emergency Medicine Services at our Trust resulted in a redesigned fracture management system with locally agreed guidelines on treatment, limiting the use of temporary immobilisation in plasters by providing black boots in A&E and implementation of a ‘Virtual’ Fracture Clinic (VFC) system which allows for 100% consultant level review of all patients referred every weekday morning. The longest a patient would wait to be called is 72 hours. A&E knows the system well, and any patient requiring more urgent Orthopaedic review is referred to the inpatient team. After the VFC consultation, the patients are phoned and given the diagnosis and rehabilitation (shared care plan) advice; this is then sent via e-mail and post to the patient and their GP. These plans are evidence-based, where appropriate or determined from expert opinion,
and give patients and GPs the exact management with exercises and timeframes which allows for self-directed rehabilitation, reducing the requirement for physiotherapy referrals. Appendix 3 gives an example of the protocol for the base of 5\textsuperscript{th} metatarsal fracture (which is a common injury), where the evidence indicates historical over management with repeat, unnecessary imaging.

Any patient placed on a self-management rehabilitation programme has access to a phone and e-mail service for any further queries, reducing subsequent re-attendance in A&E and requirements for acute physiotherapy. All patients that require follow-up are referred to the correct sub-speciality clinic at the correct time for correct management and/or close monitoring. This is determined in conjunction with the protocols and the consultant who is reviewing the cases that day.

Occasionally, an expert opinion is required for a complex presentation, and in those cases the relevant sub-speciality consultant will be consulted to determine the management plan. On other occasions, patients sometimes require further diagnostic imaging. This can be arranged directly from the VFC and either reviewed in the next VFC, if appropriate, or in the next sub-speciality clinic.

This service is currently for all adult fracture and significant soft tissue injuries, but currently excluded are wrist and hand fractures. The reason for this is multifaceted:

1. The trust already has a well-established Hand Therapy Service that is run by the Hand Surgeons, providing the sub-speciality care which is required.
2. Many hand and wrist injuries are managed in temporary plasters, and we did not want the VFC to be a stepping stone to clinic if patients clearly need to be seen.
3. This service was set up as a pilot in a patient group that needed improved standards of care. It does not have the capacity currently to include children and patients with wrist and hand injuries
4. The Hand service was successfully launched on June 6\textsuperscript{th} 2016 as planned initially. And there are plans to review the Paeds service Next year.

Although other Trusts have introduced systems of outpatient trauma triage and nurse-led clinics, and implementation of ED protocol-based discharge in NHS Scotland, there are no reports of units using Extended Scope Physiotherapists (ESPs) to manage the Virtual Fracture Clinic. This model lends itself perfectly to be led by an ESP, due to both practical and experiential reasons.

The benefits of an ESP-lead model include:

- The ability to order x-rays, MRIs and USSs.
- Provision of the vital link to high-quality rehabilitation advice for rehab post injury, to reduce the risk of developing chronic complications.
- The provision of ESP follow-up clinics for patients who do not need sub-speciality consultant review.
- The clinical skills and austerity of the ESPs to work with consultants.
- The vision and authority of the ESPs to develop the service and conduct regular audit and research.
- Representation of the service within the Trust to clinical governance for T&A and Emergency care and to other Trusts and the wider NHS.
- The raising of clinical standards in fracture management in A&E and the provision of ENP teaching.
ESP have been used within elective orthopaedics for over 10 years, with excellent outcomes reported. This model lends itself perfectly to an ESP-lead model of care with a team of currently senior physiotherapy staff to support the service. Since June 2016 the model has expanded to include patients with hand and wrist injuries and is run by a team of hand therapists.

Flow chart referral and patient pathway:

![Flow chart](image)

References:

Jenkins et al, Fracture clinic redesign reduces the cost of outpatient orthopaedic trauma care. BJR 2016  
[http://www.bjr.boneandjoint.org.uk/content/5/2/33](http://www.bjr.boneandjoint.org.uk/content/5/2/33)


Jenkins et al. Socioeconomic deprivation and age are barriers to the online collection of PROMs in orthopaedic patients. Ann R Coll Surg Eng 2016  
[http://dx.doi.org/10.1308/rcsann.2016.0007](http://dx.doi.org/10.1308/rcsann.2016.0007)

Ferguson et al, Fifth metatarsal fractures – is routine follow-up necessary? Injury 2015  

Gamble et al, Satisfaction and functional outcome with “self-care” for the management of fifth metacarpal fractures. Hand (NY) 2015


Vardy et al, Effect of a redesigned fracture management pathway and ‘virtual’ fracture clinic on ED performance, BMJ Open 2014

http://dx.doi.org/10.1016/j.jse.2013.11.006

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3282584/


2. Outcomes

2.1 NHS Outcomes Framework Domains & Indicators

<table>
<thead>
<tr>
<th>Domain 1</th>
<th>Preventing people from dying prematurely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain 2</td>
<td>Enhancing quality of life for people with long-term conditions</td>
</tr>
<tr>
<td>Domain 3</td>
<td>Helping people to recover from episodes of ill-health or following injury ✓</td>
</tr>
<tr>
<td>Domain 4</td>
<td>Ensuring people have a positive experience of care ✓</td>
</tr>
<tr>
<td>Domain 5</td>
<td>Treating and caring for people in safe environment and protecting them from avoidable harm ✓</td>
</tr>
</tbody>
</table>

2.2 Local defined outcomes

1) Improving patient experience of their fracture management by providing first line treatment in the comfort of their own home.

2) Ensuring that all management decisions are made by an orthopaedic consultant and that any follow-up care would be under the correct specialist in the correct timeframe.

“Right Professional, Right Place, Right Time”

3) Ensuring all patients receive protocol-driven, evidence-based treatment which are standardised to ensure an equally high standard of care for all patients, which is shared
4) Reducing the number of outpatient appointments with a knock-on effect to cost of service to CCGs and use of supporting services such as imaging, admin etc.

3. Scope

3.1 Aims and objectives of service

The multi-disciplinary virtual fracture clinic is a BSUH Trust initiative aimed at:
- Avoiding un-necessary outpatient appointments for patients following a fracture or significant soft tissue injury.
- To provide a 100% specialist orthopaedic consultant review service for all patients referred from A&E, local minor injuries units or satellite x-ray facilities including Hove polyclinic, five days a week.
- It is based on best practice protocols for initial A&E management and evidence-based follow-up, where evidence is available, allowing for a high standard of care for all patients within the comfort of their own home.
- Patients are provided with shared care plans which include explanations of the injury, rehabilitation timelines and exercises advised at specific stages. This is shared with their GP to support independent self-management of acute injuries.
- To provide a senior physiotherapist telephone and e-mail support service for patients with injury management questions to reduce un-necessary re-attendances in A&E or GP follow-ups. (See appendix 2 card given to patients with contact details and information on process)
- Patients requiring follow-up are appropriately triaged into the correct sub-speciality follow-up clinic at the appropriate timeframe.
- Any patient requiring immediate surgical management can be referred directly for surgery, via the day surgery pathway, without any delay.

3.2 Service description/care pathway

The lead consultant responsible for the service is James Gibbs, an Orthopaedic Consultant. The day-to-day running of the service and project development is led by Lucy Arnott, an Extended Scope Physiotherapist, with the weekly support of rotating Orthopaedic Consultants of a variety of sub-specialities and additional senor physiotherapy and radiology support. The service is currently for patients referred from the Trust’s A&E departments, local minor injuries units and satellite x-ray facilities. The service will intermittently draw on the additional services such as Podiatry, Falls and Osteoporosis services, further diagnostic imaging such as MRI, CT and USS, and infrequently requires the support of district nurses and rapid response or social services input.

3.3 Population covered

Adults who have attended a BSUH site or Lewis Victoria & Uckfeild minor injuries unit for the acute management of a fracture or suspected significant soft tissue injury, which will require orthopaedic management.

3.4 Any acceptance and exclusion criteria and thresholds

- The service does not currently include out-of-area referrals or direct GP referrals but this is an area under current development.
- Patients of no fixed abode, or without telephone contact, are excluded and managed on initial presentation to A&E by an Orthopaedic Registrar on-call.
- Patients with spinal, hand or wrist injuries
- Patients under 17 years of age.

### 3.5 Interdependence with other services/providers

The service is expected to develop good working relationships with:
- Primary care
- Other BSUH specialties such as Physiotherapy, MSK, Neurology, Imaging, Falls services
- Local providers of integrated services
- Hospital rapid response discharge team and district nurses

### 4. Applicable Service Standards

#### 4.1 Applicable national standards (eg NICE)

The use of the NICE guideline: Osteoporosis: assessing the risk of fragility fractures (2012) through the education of fragility fractures in patients referred, and linking into GP practices to assess complex factors requiring further screening.

The NICE guidance for Fractures: diagnosis, management and follow-up of fractures (excluding head and hip, pelvis, open and spinal) Published in February 2016 asked for further research on: What is the clinical and cost effectiveness of virtual new patient fracture clinics compared with next-day consultant-led face-to-face clinics in people presenting with non-complex fractures in the Emergency department and thought to need an orthopaedic opinion?

British Orthopaedic Association (BOA) Press release on June 20th 2016 summary statement: The BOA welcomes research into all aspects of improving patient care and encourages publication of the results of such trials of new fracture clinic models. BOAST 7 is due to be reviewed in two years, by which time further data should be available to update its recommendations and set standards for outpatient management. Full Reference: [http://www.boa.ac.uk/latest-news/virtual-fracture-clinic-statement/?doing_wp_cron=1466430226.1274340152740478515625](http://www.boa.ac.uk/latest-news/virtual-fracture-clinic-statement/?doing_wp_cron=1466430226.1274340152740478515625)

#### 4.2 Applicable standards set out in Guidance and/or issued by a competent body (eg Royal Colleges)

Institute of Medicine principles (2001):
NHS Scotland and our clinic model have endeavored to show that the virtual fracture clinic model is effective, equitable, efficient, safe, timely and patient-centered, in line with IOM principles

#### 4.3 Applicable local standards

Agreed orthopaedic protocols for the acute management of fractures and soft tissue injuries in A&E - see appendix attached which is an example section of the protocol.

### 5. Applicable quality requirements and CQUIN goals

#### 5.1 Applicable Quality Requirements (See Schedule 4 Parts [A-D])

#### 5.2 Applicable CQUIN goals (See Schedule 4 Part [E])
6. **Location of Provider Premises**

The Provider's Premises are located at:

Brighton and Sussex University Trust, mainly working from Royal Sussex County Fracture Clinic.

7. **Individual Service User Placement**
Appendix 1: Section from the A&E Trauma and Orthopaedic injury management protocols which covers the initial management of all acute fractures and soft tissue injuries seen in A&E

<table>
<thead>
<tr>
<th>Fracture</th>
<th>Subcategory</th>
<th>A&amp;E Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sternoclavicular joint dislocation</td>
<td></td>
<td>Sling or collar &amp; cuff, Analgesia, On-line referral to virtual fracture clinic</td>
</tr>
<tr>
<td>Clavicle fractures</td>
<td>Medial 1/3</td>
<td>Sling or collar &amp; cuff, 1-2 weeks, Analgesia, On-line referral to virtual fracture clinic</td>
</tr>
<tr>
<td></td>
<td>Middle 1/3</td>
<td>Broad arm sling/sling or collar &amp; cuff/double collar and cuff, Analgesia, On-line referral to virtual fracture clinic</td>
</tr>
<tr>
<td></td>
<td>Lateral 1/3</td>
<td>Sling or collar &amp; cuff, Analgesia, On-line referral to virtual fracture clinic</td>
</tr>
<tr>
<td>Acromioclavicular joint injuries</td>
<td></td>
<td>Sling or collar &amp; cuff, Analgesia, On-line referral to virtual fracture clinic</td>
</tr>
<tr>
<td>Soft tissue shoulder injuries</td>
<td></td>
<td>Collar &amp; Cuff, Analgesia, On-line referral to virtual fracture clinic</td>
</tr>
<tr>
<td>Shoulder dislocations</td>
<td></td>
<td>Reduce, Sling or collar &amp; cuff, Analgesia, On-line referral to virtual fracture clinic</td>
</tr>
</tbody>
</table>

Appendix 2: Business cards given to patients in A&E

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![Business card image]

You have been referred to the BSUH virtual fracture clinic. Your case will be reviewed remotely by the Orthopaedic team within 24-72 hours of your attendance in A&E.

You will then be contacted within this time-frame to discuss your individual management plan. This will be any time between 9am-4.30pm Monday-Friday.

Please ensure the hospital has your correct contact details prior to leaving the emergency department and that you are available to receive this call.
This is a follow-up letter to your recent telephone consultation with the fracture care team explaining the ongoing management of your injury. Your case has been reviewed by an Orthopaedic Consultant (Bone Specialist) and Fracture Care Extended Scope Physiotherapist.

You have sustained a fracture to the base of the 5th metatarsal of your foot, which is known as an avulsion fracture. Please see the picture below to understand where this injury is. This normally takes approximately 6 weeks to unite (heal) although pain and swelling can be ongoing for 3-6 months. You may walk on the foot as comfort allows but you may find it easier to walk on your heel in the early stages. The swelling is often worse at the end of the day and elevating it will help. The boot you have been given is for your comfort only and is not needed to aid fracture healing. Take pain killers as prescribed. If you are worried that you are unable to follow this rehabilitation plan, or have any questions, then please phone the Fracture Care Team for advice.

Picture of injury:

We do not routinely follow up patients with this type of injury. If after six weeks you are

- still experiencing significant pain and swelling or
- struggling to wean out of the boot

Please do not hesitate to contact us for a further consultation.

Or, if you are experiencing pain or symptoms, other than at the site of the original injury or surrounding area, please get in touch using the telephone or e-mail details at the top of this letter.
Please follow the Management/rehabilitation plan shown below:

<table>
<thead>
<tr>
<th>Weeks since injury</th>
<th>Rehabilitation plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3</td>
<td>Wear the boot all of the time when walking. Use the crutches to take some of the weight off your foot. It is ok to take the boot off at night and when resting at home. It is also important to perform the exercises below regularly to get the movement back.</td>
</tr>
<tr>
<td>3-6</td>
<td>Try and wean yourself out of the boot and walk without the crutches. Try walking around the house at first. You will want to wear it if you go on a long walk. Continue with the exercises to regain flexibility in your foot and ankle.</td>
</tr>
<tr>
<td>6-12</td>
<td>The fracture is united (healed) and you can begin to resume normal activity but be guided by any pain you are experiencing. You should be able to carry out day to day activities. Arduous tasks, long walks etc., may still cause some discomfort and swelling.</td>
</tr>
<tr>
<td>12</td>
<td>If you are still experiencing significant pain and swelling then please contact the Fracture Care Team for advice.</td>
</tr>
</tbody>
</table>

**Initial advice**

**Cold packs:**

A cold pack (ice pack or frozen peas wrapped in a damp towel) can provide short term pain relief. Apply this to the sore area for up to 15 minutes, every few hours ensuring the ice is never in direct contact with the skin.

**Rest and Elevation:**

Try to rest the foot for the first 24-72 hours to allow the early stage of healing to begin. Raise your ankle above the level of your hips to reduce swelling. You can use pillows or a stool to keep your foot up.

**Early movement and exercise:**

Early movement of the ankle and foot is important to promote circulation and reduce the risk of developing a DVT (blood clot). Follow the exercises below without causing too much pain. This will ensure your ankle and foot do not become too stiff. These exercises will help the healing process.

Early weight bearing (putting weight through your injured foot) helps increase the speed of healing. Try to walk as normally as possible as this will help with your recovery.
Smoking cessation

Medical evidence suggests that smoking prolongs fracture healing time. In extreme cases it can stop healing altogether. It is important that you consider this information with relation to your recent injury. Stopping smoking during the healing phase of your fracture will help ensure optimal recovery from this injury.

For advice on smoking cessation and local support available, please refer to the following website: [http://smokefree.nhs.uk](http://smokefree.nhs.uk) or discuss this with your GP.

Initial exercises (3-4 times a day)

Ankle and foot range of movement exercises. Repeat these 10 times each.

1. Point your foot up and down within a comfortable range of movement.
2. Make circles with your foot in one direction and then change direction.
3. With your heels together, move your toes apart, as shown in the picture.
## Appendix 4: URL Links to Video resources on YouTube

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<thead>
<tr>
<th>Region</th>
<th>Protocol</th>
<th>URL Youtube</th>
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</thead>
<tbody>
<tr>
<td><strong>Shoulder</strong></td>
<td>Sprain / soft tissue Injury to Shoulder</td>
<td><a href="https://www.youtube.com/watch?v=cSior4Ov4is">https://www.youtube.com/watch?v=cSior4Ov4is</a></td>
</tr>
<tr>
<td></td>
<td>Primary Shoulder Dislocation</td>
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</tr>
<tr>
<td></td>
<td>Un-displaced / Minimally Displaced</td>
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<tr>
<td></td>
<td>Greater Tuberosity (GT) Fracture</td>
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<tr>
<td></td>
<td>Proximal Humerus Fracture</td>
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<tr>
<td></td>
<td>Grade 3 ACJ (Acromioclavicular Joint) Injury</td>
<td></td>
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<tr>
<td></td>
<td>Grade 1/2 ACJ (Acromioclavicular Joint) Injury</td>
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<tr>
<td></td>
<td>Lateral (Outside) 1/3 Clavicle Fracture</td>
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<tr>
<td></td>
<td>Mid-shaft Clavicle Fracture</td>
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<tr>
<td><strong>Elbow</strong></td>
<td>Sprain / soft tissue Injury to Elbow</td>
<td><a href="https://www.youtube.com/watch?v=ZOWUCBFAG_c">https://www.youtube.com/watch?v=ZOWUCBFAG_c</a></td>
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<tr>
<td></td>
<td>Occult Proximal Radius Fracture</td>
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<td></td>
<td>Proximal Radius Fracture</td>
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<td><strong>Ankle</strong></td>
<td>Avulsion fracture to ankle</td>
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<td>Ankle Sprain</td>
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<td>Undisplaced Medial Malleolus Fracture</td>
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<tr>
<td><strong>Foot</strong></td>
<td>Avulsion Fracture to Midfoot</td>
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<td>Soft Tissue Injury to Foot</td>
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<td>Minimal displaced Midfoot Fractures</td>
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<td>Multiple Metatarsal Fractures</td>
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<td>Midshaft 5th Metatarsal Fracture</td>
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<td>Fracture to the Base of the 5th Metatarsal</td>
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<td></td>
<td>Subtle undisplaced Fracture to Midfoot</td>
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<td></td>
<td>Metatarsal Fracture to Foot</td>
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<tr>
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<td>Toe Fracture &amp; Dislocated Toe</td>
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<tr>
<td><strong>Extras</strong></td>
<td>Osteoporosis Guidelines</td>
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<tr>
<td></td>
<td>Fitting Your Össur boot correctly</td>
<td><a href="https://www.youtube.com/watch?v=FaKrzi-4cvs">https://www.youtube.com/watch?v=FaKrzi-4cvs</a></td>
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<tr>
<td></td>
<td>Guidance for using your crutches</td>
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