Fracture Quick Reference Guide

Clyde Emergency Department

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Clyde Emergency Medicine

Guidance on Referrals to the Virtual Fracture Clinic

The Virtual Fracture Clinic allows Orthopaedic Consultant review of X-Rays and clinical information to facilitate appropriate review of patients with fractures and other acute orthopaedic problems, at the right fracture clinic, at the right time.
We can achieve the best outcomes for our patients if we refer the correct patients and supply the correct information in our documentation. The information you document on the ED card is the only clinical information available to VFC and therefore must be accurate and complete.

Dischargeable Fractures:

The fractures that can be discharged from the ED and do not need referral to VFC are:
5TH METACARPAL
5TH METATARSAL
LATERAL MALLEOLUS AVULSION
PAEDIATRIC CLAVICLE
RADIAL HEAD/NECK FRACTURE
PAEDIATRIC BUCKLE WRIST

Each has a Patient Information Leaflet on CEM

Other fractures to consider discharge – closed crush terminal phalanx
- Minimally displaced toe phalanx

Information to include when referring a hand:
Any associated wounds
Hand dominance
Rotational deformity
Nerve function – MEDIAN/RADIAL/ULNAR
Scaphoid assessment complete – ASB/telescoping/scaphoid balloting
Occupation/functional demand

Information to include when referring a foot/ankle:
Fibula Fracture – any MEDIAL tenderness or bruising or swelling

Information to include referring a patella injury:
Straight leg raise

Information to include referring a shoulder injury:
Radial nerve function (wrist dorsiflexion)
Axillary nerve function (sensation)

General Information to include:
The interventions you have already done in ED

Hand Injuries

Phalangeal and Thumb

Diagnosis		ED Initial Management	ED Discharge Plan	Virtual Fracture Clinic likely management
Undisplaced prox/middle phalangeal fractures		Buddy strap 2-4 weeks	VFC Hand dominance Rotational deformity	Repeat XRs 7 days Mobilise with buddy strapping
Displaced/rotated Promixal/middle phalangeal fractures		Buddy Strap	ORTHO ONCALL	
Dislocated Interphalangeal joints		Reduce under ring block and buddy strap XR for fractures	VFC	Dorsal dislocation – generic fracture clinic FU Volar or lateral dislocations hand clinic
Crush terminal phalanx	Closed	Consider trephine	DISCHARGE	
	Open (with nailbed injury)	Ring block Wound lavage Antibiotics and dressing	ORTHO ONCALL	
THUMB MCPJ Ulnar collateral ligament rupture or Radial collateral ligament	With avulsion fracture	Rhizo forte splint Analgesia High elevation sling	ORTHO ONCALL	Conservative vs surgical treatment options
	Without fracture	Rhizo forte splint Analgesia High elevation sling	VFC	Ring block/EUA stress views, USS if within 72hrs)
	Unable to demonstrate laxity due to pain/swelling	Rhizo forte splint Analgesia High elevation sling ED review 5 days	SOFT TISSUE CLINIC 5 days	
Mallet injury		Mallet splint	DISCHARGE Patient Information Leaflet and clear advice.	

Metacarpals

<table>
<tr><th colspan="2">Diagnosis</th><th>ED Initial Management</th><th>ED Discharge Plan</th><th>Virtual Fracture Clinic likely management</th></tr>
<tr><td colspan="2">1st Metacarpal base/shaft (not affecting joint surface)</td><td>Splint or backslab</td><td>VFC
Hand dominance</td><td>Arrange f/u for Bennett's cast/thumb splint and physio</td></tr>
<tr><td colspan="2">Bennett's (intra-articular base 1st metacarpal)</td><td>Splint or backslab</td><td>ORTHO
ONCALL</td><td></td></tr>
<tr><td colspan="2" rowspan="2">5th metacarpal neck</td><td>Buddy strapping 2-4 weeks
High elevation sling</td><td>DISCHARGE
PIL
Early mobilisation</td><td rowspan="2"></td></tr>
<tr><td>UNLESS:
Rotational deformity
"Fight bite"</td><td>ORTHO
ONCALL
LA, Irrigate, prophylactic ABx (co-amox)
BBV/tetanus</td></tr>
<tr><td rowspan="2">Metacarpal shaft/base</td><td>Undisplaced</td><td>Padded crepe bandage</td><td>VFC
Hand dominance
Rotational deformity
Functional demand</td><td>Assess for dislocated CMCJ requiring closed reduction and percutaneous pinning</td></tr>
<tr><td>Displaced</td><td>Volar slab</td><td>ORTHO
ONCALL</td><td></td></tr>
</table>

Scaphoid

Diagnosis	ED Initial Mananagement	ED Discharge Plan	Virtual Fracture Clinic likely management
Scaphoid Fracture	Wrist (futura) splint (note guidance change away from thumb splints)	VFC Hand dominance Functional demand	Short arm cast without thumb) 6-8 weeks <50yrs hand clinic (acute). >50yrs generic fracture clinic
Clinical scaphoid	Wrist (futura) splint	VFC	Review 10-14 days for repeat XRs or MRI if uncertainty

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Forearm Injuries

Diagnosis	ED Initial Management	ED Discharge Plan	Virtual Fracture Clinic likely management
CHILD Torus/Buckle	Splint Analgesia	DISCHARGE with PIL	
CHILD undisplaced/minimally displaced greenstick	POP slab	VFC	
CHILD displaced fractures requiring manipulation	POP slab	ORTHO ONCALL to assess and onward referral to RHC	
ADULT Colles Undisplaced/minimal displacement	Splint	VFC Hand dominance	If no functional demand then consider discharge.
Displaced Colles fractures	Splint/POP slab	ORTHO ONCALL	
High risk fractures : High energy injury Open Neurological deficit Off-ended/grossly unstable Distal radius and ulna	POP slab	REFER IN RESUS TO ORTHO ONCALL	MUA under sedation
Monteggia (fracture ulnar shaft and dislocation radio-ulnar joint)	Analgesia Above elbow back slab BAS	ORTHO ONCALL	
Galleazzi (fracture of radius with dislocation distal radio-ulnar joint)	Analgesia Above elbow back slab BAS	ORTHO ONCALL	
Smith's (volar angulation) Barton's (longitudinal/intra-articular)	POP slab	ORTHO ONCALL	
Isolated ulna shaft	Above elbow slab >50% displacement – refer ortho oncall to consider fixation	VFC Hand dominance	2 weeks, convert to below elbow cast.

Elbow Injuries

Diagnosis	ED Initial Manangement	ED Discharge Plan	Virtual Fracture Clinic likely management
Elbow dislocation	Neurovascular assessment Safe sedation Reduce (longitudinal traction and slight flexion) Above elbow backslab Post reduction XR.	ORTHO ONCALL	
Olecranon fracture	Neurovascular assessment Analgesia Above elbow backslab	ORTHO ONCALL (unless non-displaced or not surgical candidate – VFC)	
Radial head/neck fractures	If comminuted/>33% of articular surface/>15% angulation– above elbow backslab - VFC Others – DISCHARGE FROM ED WITH PIL, broad arm sling and analgesia	VFC Document hand dominance, reason not discharged from ED eg comminuted)	
Distal Third Humerus fracture Beware vascular injury – assess and document BRACHIAL, RADIAL, ULNAR pulses	Undisplaced High above elbow cast	VFC Document hand dominance and functional status	
	Displaced	ORTHO ONCALL	

Shoulder and Humeral Injuries

Diagnosis	ED Initial Management	ED Discharge Plan	Virtual Fracture Clinic likely management
Anterior shoulder dislocation	Assess and document axillary nerve function (badge area) Reduce (safe sedation) Post reduction XR Polysling Analgesia	VFC	<25yrs discuss with shoulder specialist re:stabilization >40 years – USS to assess cuff, ref to shoulder clinic if tear. Recurrent – shoulder clinic
Anterior shoulder dislocation with associated fracture	Do not attempt reduction unless undisplaced GT fracture	ORTHO ONCALL	If reduced – VFC – specialist shoulder fracture clinic
Posterior shoulder dislocation	As for anterior dislocation Refer ortho oncall if reduction unsuccessful	VFC	
Proximal Humerus	Greater tuberosity, undisplaced or 5-10m displaced Broad arm sling (polysling)	VFC	Review after one week, ? fracture displaced
Shaft of Humerus – <2 parts	Humeral brace Post application XRs	VFC Document hand dominance Functional status	
Shaft of Humerus – >3 parts	Humeral brace Post application XRs	ORTHO ONCALL	
Clavicle Fracture – Displacement Skin tenting Open Comminuted SCJ dislocation		ORTHO ONCALL	Surgical Mx may be required Shoulder clinic if no healing at 3 months.
Clavicle Fracture – None of the above	Assess neurovascular Broad arm sling Analgesia	VFC Hand dominance	Sling 4 weeks, pendular exercises at 2 weeks. Rv and XR at 6weeks
Sterno-clavicular joint dislocation	CXR ECG if posterior Anterior – BAS, analgesia	ORTHO ONCALL	

AC joint disruption	Grade I - II Joint capsule intact	DISCHARGE Early mobilization BAS 2-3 days only Analgesia	
	Grade III AC and CC ligaments torn	VFC BAS weight bearing views functional status/demand	Surgical management may be required depending on stability/demand
	Grade III with skin compromise	ORTHO ONCALL	
Scapula fracture	Assess for associated chest wall and pulmonary injury Broad Arm Sling Adequate analgesia	VFC Document winging of scapula	

Advice for patients with shoulder/humeral injuries:
All patients who go into a Polysling should be allowed hand and wrist exercises on day 1 and start elbow mobilization at 2 weeks post injury.
All patients in a Humeral brace should be allowed to mobilize the elbow at 2 weeks post injury and the collar and cuff part of the brace should be removed at 4 weeks post injury to avoid the development of elbow stiffness.
No shoulder dislocation should be immobilized for >2 weeks(preferably 1 week for comfort) in most cases except exceptional circumstances.

Hip and Pelvis Injuries

Diagnosis	ED Initial Management	ED Discharge Plan	Orthopaedic likely management
Neck of Femur fracture	Analgesia – Fascia Iliaca Block (or morphine) IV access and bloods inc G&S IV fluids ECG/CXR Delerium Screen NEWS score Pressure care assessment BIG 6	ORTHO ONCALL (overnight complete big 6 and admit straight to ward, inform oncall)	Intracapsular – hemiarthroplasty Extracapsular - DHS
Pubic Ramus Fracture	Adequate analgesia Assess mobility Reason for fall? Consider discussion with medics if uncertainty	MOBILE – DC with analgesia and consider social support IMMOBILE – ORTHO ONCALL	Conservative
Acetabular fracture	Adequate analgesia Bed rest	ORTHO ONCALL	Further imaging
Hip dislocation	Analgesia - morphine Assess and document sciatic nerve function (dorsiflexion against resistance) Not usually reduced in ED	ORTHO ONCALL	Prosthetic joint – fast for theatre Native joint – further imaging likely to be needed
Femoral Shaft fracture	IV access, bloods inc G&S Femoral nerve block Thomas splint ECG CXR	ORTHO ONCALL	

Knee Injuries

Diagnosis	ED Initial Management	ED Discharge Plan	Virtual Fracture Clinic management
Pain NO TRAUMA Including OA with flare		Discharge with ref to PT or GP	NA
Knee effusion NO TRAUMA	Bloods inc CRP/ESR/urate blood cultures Adequate analgesia Knee XR Compression if anticoagulated	Ortho oncall team	NA
Minor traumatic injury: Weight bearing No effusion No instability Full active extension Established OA	RICE Tubigrip if required Knee exercise sheet Adequate analgesia Early mobilization	Refer to PT depending on baseline function and compliance	
Moderate traumatic injury: Non-weight bearing Minor Effusion Diagnostic uncertainty No demonstrable Injury	RICE Tubigrip if required Knee exercise sheet Adequate analgesia Early mobilization	Review at SOFT TISSUE CLINIC 10-14 days (5-7 days if unable to adequately examine knee due to pain)	
Severe traumatic injury: Acute haemarthrosis Demonstrable ligamentous laxity Lipohaemarthrosis no fracture	Adequate Analgesia Elevate leg REFER ORTHO ONCALL		
Distal Femur fractures	Intra-articular/infracondylar – above knee back slab Supracondylar fracture – Thomas splint Adequate analgesia	ORTHO ONCALL	
Tibial Plateau fractures	Adequate analgesia Above knee back slab Elevate leg	ORTHO ONCALL	
Proximal Fibula Fracture	Adequate analgesia Tibia and Fibula XR Padded crepe bandage Non-weight bearing with crutches	VFC Document common peroneal nerve function	
1st time patella dislocation – no associated fracture	Reducible in ED – Wool and crepe or knee splint, post reduction XR	VFC Document straight leg raise	RV 1/52 in knee splint Exercise sheet and ref to PT if appropriate

Patella dislocation – associated bony injury		ORTHO ONCALL	Urgent outpatient MRI
Locked knee (held in flexion, associated with meniscal injury)	Adequate analgesia Knee XR	ORTHO ONCALL	MRI

Foot and Ankle Injuries

Ankle Fractures

Diagnosis	ED Initial Management	ED Discharge Plan	Virtual Fracture Clinic management
Isolated tip of fibula avulsion or medial malleolus avulsion	Treat as ankle sprain RICE advice Tubigrip or Velcro boot as pain dictates Early weight bearing mobilisation If medial – examine and document proximal fibula	Discharge with PIL	
Weber A distal fibula fracture	Treat as ankle sprain RICE advice Tubigrip or Velcro boot as pain dictates Early weight bearing mobilization Medial assessment – bruising swelling tenderness?	Discharge with PIL Contact if ongoing pain at 3 months	
Weber B distal fibula fracture – no talar shift or displacement	Velcro boot or Back-slab as pain dictates Analgesia Weight bearing as able Medial assessment	VFC Examine and document medial swelling/bruising/swelling	Velcro boot 6 weeks and Discharge if no medial concerns
Weber B distal fibula fracture – Talar shift or displacement	Analgesia Below knee back-slab	ORTHO ONCALL	Admit for ORIF If unclear/equivocal - AP mortice and lateral XRs ? medial joint space

Weber C distal fibula fracture – no Talar shift or displacement	Velcro boot Analgesia	VFC Document medial examination – swelling/bruising/tenderness	
Weber C distal fibula fracture – Talar shift or displacement	Analgesia Transfer to resus Reduce under sedation Below knee back-slab	ORTHO ONCALL	Admit for ORIF
Bimalleolar/Trimalleolar Ankle fractures – Undisplaced	Analgesia Check skin Below knee Back-slab	VFC	
Bimalleolar/Trimalleolar Ankle fractures – Displaced and Talar shift	Transfer to resus Check and document skin and NV status Analgesia Reduce under sedation Below knee back-slab	ORTHO ONCALL	

Foot Fractures

Diagnosis	ED Initial Management	ED Discharge Plan	Virtual Fracture Clinic management
Calcaneal fractures Always examine for lumbar spine tenderness Calcaneal views – dedicated calcaneal view and lateral ankle	Undisplaced/minimal displacement Below knee back-slab	VFC Discuss with ortho if unsure	Review 1st foot and ankle fracture clinic
	Displaced Check skin, NV status Analgesia BK back-slab	ONCALL ORTHO	Admit for CT
Talus fracture	Analgesia NV status, skin BK back-slab	ONCALL ORTHO	Often require CT
Tarsal bones – small avulsion, no disruption of alignment	Treat as sprain Tubigrip/Velcro boot Early weight bearing	Discharge with Sprain PIL If unsure ref VFC	
Tarsal or cuniform fractures – displaced of intra-articular	Minimal displacement Velcro boot, WB if pain allows	VFC	

Beware high velocity injury	Significant displacement/ malalignment Skin/NV status BK back-slab	ORTHO ONCALL	CT scan
Metatarsal basal fractures – intra-articular ?Lis Franc, not obvious	Velcro boot, analgesia Weight bearing as able	VFC	1st foot/ankle clinic Weight bearing views
TMTJ fracture/dislocation or obvious Lis Franc	Check skin, NV status Analgesia BK back-slab	ORTHO ONCALL	Admit for CT
Metatarsal neck/shaft – undisplaced	Tubigrip or Velcro boot Early weight bearing	Discharge with PIL	
Metatarsal neck/shaft - displaced, multiple, high velocity	Check skin, NV status BK back-slab	ORTHO ONCALL	CT scan
Isolated 5th Metatarsal fracture	Tubigrip or Velcro boot Early weight bearing	Discharge with PIL	Ongoing problems after 3 months – contact advice number
	Jones fracture – proximal 5th metatarsal at joint between 4th and 5th metatarsal bones – high risk non-union.	VFC Velcro boot	
Toe phalangeal fractures	Undisplaced/minimally displaced	Discharge with advice	
	Displaced, intra-articular	VFC	
Toe dislocations	Reduce in ED	Discharge (if irreducible – ortho oncall)	
Achilles Tendon Injuries	Equinus Back slab	VFC	See within 7 days of injury Late presentation – foot/ankle clinic