Clinical guideline for non operative fracture management guideline for Virtual and Fracture Clinic, RCHT

Upper Limb injuries. **NB: certain fracture patterns may need a different sling to ensure optimal outcome**

Type of injury	Non operative Management	VFC/ Clinic RV	Review Interval weeks	Repeat X-ray	Caution
Shoulder					
Clavicle (Adult) (med/middle/lateral)	Broad Arm Sling (6 weeks)	VFC FC	1-2 4-6	Y If clinically indicated	• Mal-union, Non Union • Posterior displacement-mediastinal injury (CT chest) • Nerve Injury • Skin compromise
ACJ subluxation or **ACJ dislocation** Superior Posterior/ inferior (rare)	BAS/polysling; (1-2 weeks) mobilise as comfort allows may require fixation BAS	VFC VFC	1 -2 1-2	Clinical Exam Yes +/- CT	• Persistent pain/ deformity • Posterior dislocation NV injury, mediastinal: urgent referral
Sternoclavicular dislocation	Polysling or BAS	Ant: YES Post: NO	1-2 weeks	Clinical exam	• Posterior dislocation-refer urgently CT, Potential compression of trachea/ great vessels • Anterior: VFC

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Scapula **Blade**: Min displaced **Glenoid, neck, acromion or Corocoid**	1. Broad Arm Sling for 1-2 weeks 2. follow by early mobilisation to restore shoulder function	VFC FC VFC and discussion with shoulder specialists	1 week 6 weeks 1 week	No No CT scan for glenoid, acromion Yes	• Nerve Injury; Urgent ortho opinion +/- CT • Check for associated injuries as normally high energy fractures
Shoulder Dislocation **# dislocation**	Reduce BAS or Polysling for 1-2 weeks BAS or Polysling	VFC Refer to Mr Dixon secretary for Annie Rae (APP) VFC		No	• Axillary nerve Injury • RC tear in older patients • Humeral # may occur during reduction if rotation used • Bankhart, Lesion • Posterior: easily missed; look for lightbulb sign • Ortho on call bleep • Axillary nerve check • No elevation/ abduction for 6 weeks

Soft tissue Shoulder injuries	BAS (1 week) Early mobilisation	VFC ? FC/ Physio	1 week	No Clinical exam	• RC in older patients > 40 • US scan if high demand patients
Acute Shoulder Pain **Calcific tendonitis**	Sling for comfort	? VFC		No	• Exclude Infection (temp, FBC, CRP) • Calcific tendonitis

Proximal humerus neck and GT
 	
SHAFT
	High arm Collar and Cuff;
	6 weeks
	
	Humeral Brace
	(6-8 weeks, occ 12 weeks)
	or
	hanging U slab
	(1 week)
		VFC
		FC
			1 weeks- **Refer to physio**
			6 weeks
			12 weeks
			(if needed clinically)
				Yes
				Consider CT at 1-2/52
					• Document NV findings clearly
					• **Next available fracture clinic for all 3 types, NB younger patients ? ORIF see quicker**
					• **Sling advice: Wear day and night**
					• **Avoid active elevation/ abduction in GT # for 6/52, use waist strap in sling**
					• Proximal half common site for pathological #
					• Radial nerve injury-wrist drop
					• Start physio at 3 weeks, refer promptly
					• **Midshaft criteria** for acceptable alignment include:
					  ▪ < 20° anterior angulation
					  ▪ < 30° varus/valgus

					angulation ▪ < 3 cm shortening. • **Re-image after any intervention (e.g change of sling)**
Elbow					
Olecranon	**Above elbow POP for 2-3 weeks**	VFC	Less than a week 3 weeks 6 weeks ? 12 weeks	Yes Yes Yes Clinical examination	• Open • Displacement by pull of triceps • Ulna nerve Injury
Radial Head and neck	BAS , mobilise early	VFC FC	1-2 weeks and DC	If clinically required or if having trial of non operative mgt	• Posterior Interosseous nerve Injury; check wrist/ finger extension
Biceps Rupture	BAS	VFC Direct referral to ortho reg for Mr Dainton	**Within a few days at least have Mr Dainton informed**	US	• Urgent Ortho referral for distal biceps rupture
Forearm					
Radial shaft	Above Elbow POP	VFC	1-2 weeks 6 weeks	Y No	• Watch for Galeazzi; associated dislocation of distal radioulnar joint.
Distal radius/ulna	POP to LW +/- splint	VFC FC	1 week 4 weeks	Yes No	• Shortening, Angulation: Consider Surgery • Check median nerve • Watch for Monteggia • On call ortho for unstable injuries

Lower Limb injuries

Type of injury	Non operative Management	VFC/ Clinic RV	Review Interval	Repeat X-ray	Caution
Pubic Rami	Elbow Crutches x 2	DC to physio from ED **Not for VFC**		no	
Femoral Shaft	Admit	**Not for VFC**		Yes; whole femur	• Fragility fractures in over 50s • Pathological fractures
Femoral Condyles-undisplaced	AB knee cast or brace	On call team called for mgt advice and ? VFC	1week 6 weeks 12 weeks	Yes Yes	
Undisplaced Patella #	T scope brace (PWB for 6 weeks) locked in extension until seen in clinic.	VFC FC	Every 2 weeks adjust brace if xrays satisfactory * 6 weeks	Yes yes	• Ensure extensor mechanism intact, if unsure for senior review • *0-30 for 2/52, 0-60 for 2/52, 0-90 for 2/52 • 6 weeks in brace then mobilise freely if x-rays satisfactory
Tibial plateau undisplaced	Brace *AK cast only if very poor bone quality or non compliant patient **NWB for 6/52**	VFC FC	1-2 weeks 6 weeks 12 weeks	Yes Yes Depends on findings	• 0-30 2/52, 0-60 for 2/52, 0-90 for 2/52 • *Lock in ext for 1st 2/52 if poor bone quality • Wean out of Brace at 6weeks if good bone quality. • Consider further 6 weeks if multifrag or poor bone quality in unlocked brace

					PWB and wean at 12 weeks • NWB 6/52
Tibial shaft	1. Backslab NWB for 3/52 2. Sarmiento Cast at 3-6/52 for 4-6/52 FWB 3. Boot (depends on location)	VFC FC	1-2 weeks 4-6 weeks 12 weeks	Yes Yes Yes	• Ensure WB in sarmiento cast FWB • Follow to union
Acute knee Injury • Clinically acutely locked knee with haemarthrosis	T scope brace in 10 degrees flexion	VFC	• 48 -72 hours	Urgent MRI as clinically indicated	• Suspect ACL/ bucket handle meniscal tear – MRI • Beware of possible knee dislocation – consider urgent CT arteriogram
• Multiple ligamentous Injury	Crutches TWB, (T-scope 30-60)	**Review by Oncall Reg. Not for VFC**	• For urgent MRI +/- CT arteriogram	Urgent MRI	• Generally bracing is 6 weeks
• Posterolateral Corner	Crutches PWB, (T-scope 0-30).	VFC	• 48 – 72 hours	Urgent MRI	
• Probable Meniscal Injury	Thermowrap if needed	VFC	• 1 week		
• Grade 2/3	MCL – T Scope 0-90	VFC		Urgent MRI	• Beware acute MCL injuries opening in

Ligament Injury Isolated	ACL – T Scope 0-90. PCL – Extension in PCL rebound brace	VFC	1 week		extension with positive dial tests at 30 degrees – possible posterior oblique injury with MCL (requires acute repair therefore should be reviewed within 48-72 hours)
Patella Dislocation	<u>**T scope**</u>: week 1: 0-45 week 2: 0-90 **Patella Stabilisation brace** once SLR, no lag (6 weeks)	VFC Refer to Tim Powell (APP knee) 1 -2 weeks		• MRI if 1st time dislocators if paediatric or large haemarthrosi • Recurrent dislocators, please refer to their previous Consultant	• Beware of Osteochondral defects with mechanical symptoms. • Haemarthrosis need urgent MRI

Ankle

Type of injury	Non operative Management	VFC/ Clinic RV	Review Interval	Repeat X-ray	Caution
Weber A	Boot FWB, wean out as able	VFC	1-2 weeks DC to physio	Y Weightbearing	• Talar shift • DVT • Med tenderness • Infection
Weber B	Boot	VFC	1 week 6 weeks	Yes-Weight bearing Yes If OK mobilise FWB	• Talar shift • DVT • Med tenderness • Infection
Weber C	Boot	VFC	1 week 6 weeks	Yes-Weight bearing Yes If OK mobilise FWB	• Talar shift • DVT • Med tenderness • Infection
Calcaneum #	Discuss with oncall team **all calcaneal fractures with potential for or with skin compromise must be referred as an emergency**	**Not for VFC**		Yes Obtain calcaneal view Yes	• CT if high clinical suspicion but negative on plain films • NWB for first 6 weeks • CT if displaced and urgent F and A apt • Beware risk of pressure necrosis of posterior skin
5th metatarsal #	Boot or supportive footwear FWB	**DC from VFC or RV at 3/12 (SEE PROTOCOL)**			• ED with info leaflet • Zone 2/3/ and displaced or rotated shaft 3/12 F/U

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					• Re fractures of 5th met need to be seen
Displaced 1st Metatarsal Fracture	Boot NWB	VFC	1-2 weeks 6 weeks 12 weeks	Yes Yes	• NB if displaced. Lower threshold for surgery
Phalanges (undisplaced)	Buddy strapping or metatarsal pad	**NOT FOR VFC**		No	• Discharge from ED with leaflet • Consider referral to VFC if big toe
Type of injury	**Non operative Management**	**VFC/ Clinic RV**	**Review Interval**	**Repeat X-ray**	**Caution**
Ankle sprain		**NOT FOR VFC**			• DC TO PHYSIO at ED • REFER BACK AT 3/12 FOR ONGOING PAIN OR INSTABILITY/ SWELLING
TA ruptures	• RCHT TA protocol (vacoped in full equinus) • Under 50 consider operative	• Under 50 urgent CONS review ASAP • If non operative, DC care to physio If non operative, DC care to physio		No	• Re-rupture • Pts under 50, active, with physically demanding jobs; discuss with on call ortho • DVT risk • Delayed presentation need exception and need to be seen

Paediatric Non operative fracture management

Type of injury	Non operative Management	VFC/ Clinic RV	Review Interval	Repeat X-ray	Caution
Clavicle (Under 16)	BAS for comfort and info sheet given at ED	**VFC and discharge from VFC if consultant happy**			• NAI • Skin compromise • Ensure info leaflet given at ED
Torus/ Buckle	Splint preferably Or soft cast Info leaflet	**VFC and DC over phone**	No	No	• Missed # • NAI • Ensure info leaflet given at ED
Humerus	C and C	VFC	1 week 4 weeks +/- 8 weeks	Yes Yes If clinically indicated	• NAI • NV status • ROM restriction (elbow and wrist only until united)
Supracondylar	Undisplaced-POP Above elbow with elbow max 90 (3/52) Displaced –MUA +/- wires or ORIF	VFC	1 week 3 weeks	Gartland 1: No Gartland 2; Yes No	• Elbow stiffness • Significant nerve and arterial injury common • Most heal well within 3/52 • NAI
Lateral epicondyle **Med epicondyle**	As above If displaced: open reduction Same as Lateral, discuss with Consultant	VFC	1 week 3 weeks	Yes Yes	• Ulnar nerve Injury • Displacement or incarceration • Watch for associated dislocation • NAI

Lateral condyle	Undisplaced-POP Above elbow with elbow max 90 3/52	VFC	1 week 3 weeks	Yes Yes	• Contact Consultant • **Bring in same day if VFC**
Greenstick #	POP/LW or splint	VFC	1 week 3 weeks	Yes If clinically indicated	• NAI
Femoral Shaft	Refer to RCHT protocol	N/A		Y; whole femur	• Pathological fractures • **CONSIDER NAI IF NOT WALKING AGE**
Toddlers #	Long Leg Cast	VFC	1 week 4 weeks	Yes Yes	• **CONSIDER NAI IF NOT WALKING AGE**