

Nurse Practitioner – Emergency Services
 CLINICAL PRACTICE GUIDELINE
INJURY - HAND

Scope		Outcomes
Nurse Practitioner	<ul style="list-style-type: none"> Hand injury 	Identify patients suitable for NP (Emergency) CPG
Medical Practitioner +/- Nurse Practitioner	<ul style="list-style-type: none"> Haemorrhage uncontrolled Compound # / obvious fracture dislocation/ dislocation Neurovascular compromise Altered conscious state including effects of drugs / alcohol History consistent with collapse 	Identify patients not suitable for NP (Emergency) CPG and redirect Mx to usual ED care with NP (Emergency) part of the ED team.
Initial Assessment and Interventions		Outcomes
History	<ul style="list-style-type: none"> Mechanism of injuries sustained Time of injury Treatment given pre hospital Dominance of injured hand Occupation Position of hand at time of injury Range of movement / Deformity Past medical history / medications Allergies / immunisations / tetanus status Last food / fluids 	Identify patients not suitable for NP (Emergency) CPG → exit CPG. Referral to EP.
Focused clinical assessment	<ul style="list-style-type: none"> tendons ^[1] functional ability Open wound see Open Wound CPG 	Additional management required Determine method of closure
Neurovascular Assessment	<ul style="list-style-type: none"> colour warmth movement sensation capillary refill peripheral pulse 	Identify patients not suitable for NP (Emergency) CPG → exit CPG
Pain Assessment	<ul style="list-style-type: none"> Pain scale 	Determine need for and type of analgesia
Analgesia / First Aid Management	<ul style="list-style-type: none"> First aid <ul style="list-style-type: none"> - rest - ice / immobilisation - compression - elevation Administration of analgesia (see medications) 	Reduction / relief of pain. Minimise or prevention of complications

Working diagnosis and Investigations		Outcomes
Imaging	<ul style="list-style-type: none"> Imaging may not be required if <ul style="list-style-type: none"> - patient has full range of motion - no bony or focal tenderness ^[2] Hand x-ray required if <ul style="list-style-type: none"> • Pain in elicited in hand suggestive of bony tenderness • Suspicion of FB • Suspicion of tendon injury ^[1] 	Detect foreign body or determine joint involvement Identify specific injury and determine patient management
Pathology	Not routinely indicated but consider; <ul style="list-style-type: none"> • Pre operative investigations may include FBP, U&E, Group and Hold and INR as discussed with admitting medical officer. 	
Interpretation of results (diagnostic features) and management decisions		Outcomes
PAEDIATRIC CAVEATS All patients under the age of 15 presenting with injury to hand with localised pain, require x-ray whether bony tenderness is present or not. Fracture may be present without bony tenderness. Growth Plate tenderness If no fracture/dislocation seen but open growth plate on x-ray and tenderness over growth plate, manage as fracture with immobilisation and follow up at GP or trauma clinic in 10 days for clinical reassessment ± further immobilisation.		
No fracture seen suggestive of Soft tissue injury. Tendons and nerves intact.	<ul style="list-style-type: none"> • NP (Emergency) review with view to discharge • Apply conforming tubular bandage for comfort and support • High arm sling or splint dependent upon level of function • Continuing analgesia for the patient to take following discharge from the ED until required or review • Patient education / health promotion/RICE • Follow-up appointment with GP if required 	Patient identified as suitable for NP (Emergency) CPG and discharged safely
No fracture seen. Tendons ruptured or partially ruptured or sensation impaired. No open wounds.	<ul style="list-style-type: none"> • NP (Emergency) review with view to discharge • Appropriate immobilisation by NP (Emergency) ^[1, 3, 4] • High arm sling • Referral to Plastic Dressing Clinic SCGH/PMH • Continuing analgesia for the patient to take following discharge from the ED until required or review • Patient education / health promotion/RICE • Follow-up appointment with GP if required 	Patient identified as suitable for NP (Emergency) CPG and referred to Plastics Outpatients.

Nurse Practitioner – Emergency Services
CLINICAL PRACTICE GUIDELINE
INJURY - HAND

<p>No fracture seen, tendons ruptured/partially ruptured or sensation impaired. Open wound</p>	<ul style="list-style-type: none"> • NP (Emergency) review with view to refer to Plastics Registrar PMH/SCGH for advice +/- transfer and operative repair • Appropriate wound care – see Open wounds CPG • Analgesia – see medications • Prophylactic antibiotic cover after discussion with Plastics Registrar – see medications • Maintain nil orally until review • IV fluids if appropriate see medications • Appropriate immobilisation by NP (Emergency) ^[1, 3, 4] • High arm sling • Arrange transfer 	<p>Patients identified as suitable for NP(Emergency) CPG and referral to Plastics Registrar PMH/SCGH</p>
<p>Distal, Middle and Proximal phalangeal fractures ± (small avulsion fractures and tendon ruptures) stable, undisplaced, no intra-articular component, no open wound,</p>	<ul style="list-style-type: none"> • NP (Emergency) review with view to discharge ^[1, 3, 4] • Appropriate immobilisation by NP (Emergency) ^[1, 3, 4] • High arm sling • Referral to Plastic Dressing Clinic SCGH/PMH • Continuing analgesia for the patient to take following discharge from the ED until required or review • Patient education / health promotion/RICE • Follow-up appointment with GP if required 	<p>Patient identified as suitable for NP (Emergency) CPG and referred to Plastics Outpatient Clinic.</p>
<p>Distal, Middle and Proximal Phalangeal fractures Unstable, displaced</p>	<ul style="list-style-type: none"> • NP (Emergency) review with referral to Plastics Unit for advice +/- transfer and operative repair • Review and maintain adequate analgesia – see medications • Monitor neurovascular perfusion of limb • Maintain nil orally until review • IV fluids if appropriate see medications • Appropriate immobilisation by NP (Emergency) ^[1, 3, 4] • High arm sling • If open wound - Prophylactic antibiotic cover after discussion with Plastics Registrar – see medications • Patient education re admission/transfer 	<p>Consultation by Plastics Registrar PMH/SCGH and patient discharged or transfer arranged.</p>

<p>Metacarpal injuries (Ligamentous ie. UCL) no # seen</p>	<ul style="list-style-type: none"> • NP (Emergency) review with view to discharge • Appropriate immobilisation ^[3] • High arm sling • Referral to Plastics Dressing Clinic SCGH/PMH • Continuing analgesia for the patient to take following discharge from the ED until required or review • Patient education / health promotion/RICE • Follow-up appointment with GP if required 	<p>Patient identified as suitable for NP(Emergency) CPG and discharged safely</p>
<p>Metacarpal neck/shaft fractures Displaced</p>	<ul style="list-style-type: none"> • NP (Emergency) review with view to referral to EP for consideration for closed reduction • Referral to Plastics Registrar PMH/SCGH • Gutter splint POP • High arm sling • review and maintain adequate analgesia • Maintain nil orally until review • Monitor neurovascular perfusion of limb • IV fluids if appropriate – see medications • Patient education re transfer • Continuing analgesia for the patient to take following discharge from the ED until required or review • Patient education / health promotion • Follow-up appointment with GP if required 	<p>Referral to Plastics Registrar and patient discharged or transfer arranged.</p>
<p>Metacarpal neck/shaft fractures ^[4,5] Undisplaced</p>	<ul style="list-style-type: none"> • NP (Emergency) review with view to discharge • Volar POP backslab ^[3] • High arm sling • Referral to Plastics Dressing Clinic SCGH/PMH • Continuing analgesia for the patient to take following discharge from the ED until required or review • Patient education / health promotion/RICE • Follow-up appointment with GP if required 	<p>Patient identified as suitable for NP (Emergency) CPG and referred to Plastics Outpatient Clinic.</p>
<p>Metacarpal base #</p>	<ul style="list-style-type: none"> • NP (Emergency) review with view to immediate referral to Plastics Registrar • Gutter slab ^[4, 5] • High arm sling • Continuing analgesia for the patient to take following discharge from the ED until required or review • Patient education / health promotion/RICE • Follow-up appointment with GP if required 	<p>Referral to Plastics Registrar and patient discharged or transfer arranged.</p>

Nurse Practitioner – Emergency Services
 CLINICAL PRACTICE GUIDELINE
INJURY - HAND

<p>Metacarpal # thumb</p>	<ul style="list-style-type: none"> • NP (Emergency) review with view to immediate referral to Plastics Registrar • Thumb spicca ^[4, 5] • High arm sling • Continuing analgesia for the patient to take following discharge from the ED until required or review • Patient education / health promotion/RICE • Follow-up appointment with GP if required 	<p>Referral to Plastics Registrar and patient discharged or transfer arranged.</p>
<p>Clenched Fist – Tooth Injuries</p> <p>Involving MCP</p>	<ul style="list-style-type: none"> • NP (Emergency) review with view to immediate referral to Plastics Registrar • Require x-ray. • Tetanus prophylaxis if necessary • Prophylactic oral antibiotics. • Appropriate dressing and High arm sling • Tetanus prophylaxis if necessary • IV Antibiotics as guided by Plastics Registrar - see formulary • Fasting • Transfer to Plastics • Appropriate dressing and High arm sling 	<p>Patient identified as suitable for NP(Emergency) CPG and discharged safely</p> <p>Referral to Plastics Registrar and patient transfer arranged.</p>
<p>Nail bed Injuries</p>	<ul style="list-style-type: none"> • NP (Emergency) review with view to immediate referral to Plastics Registrar • IV Abs as guided by Plastics Registrar– see formulary • Tetanus prophylaxis if necessary • Appropriate dressing and High arm sling • Fasting • Transfer to Plastics 	<p>Referral to Plastics Registrar and patient transfer arranged.</p>

<p>Finger Tip Injuries</p> <p>Pulp Amputation - No bone exposed - Less than 1 cm diameter</p> <p>Bone exposed or greater than 1 cm diameter</p> <p>Amputation/Partial amputation</p>	<ul style="list-style-type: none"> • NP (Emergency) review in view of referral to Plastics Dressing Clinic • Tetanus prophylaxis if necessary • Appropriate dressing and High arm sling <ul style="list-style-type: none"> • Immediate Plastic Registrar referral • IV Abs as guided by Plastics Registrar– see formulary • Tetanus prophylaxis if necessary • Appropriate dressing and High arm sling • Fasting • Transfer to Plastics <ul style="list-style-type: none"> • Analgesia – see formulary • X-ray • Immediate Plastic Registrar referral • IV Abs as guided by Plastics Registrar– see formulary • Tetanus prophylaxis if necessary • Appropriate dressing and High arm sling • Fasting • Transfer to Plastics • Care of tip – see Appendix 	<p>Patient identified as suitable for NP (Emergency) CPG and referred to Plastics Outpatient Clinic.</p> <p>Referral to Plastics Registrar and patient transfer arranged.</p>
<p>Management other</p>	<ul style="list-style-type: none"> • Need for antibiotics and or tetanus will depend on patient MIST and wound examination findings ^[6] 	
<p>Associated Care</p>	<ul style="list-style-type: none"> • Consider ECG /CXR for patients who require surgical intervention 	
<p>Acute Referral</p>	<ul style="list-style-type: none"> • Referral to +/- physiotherapy +/- interpreter +/- Allied health etc 	
<p>Patient discharge education</p>		<p>Outcomes</p>
<p>When to return</p>	<ul style="list-style-type: none"> • Verbal instructions from NP (Emergency) • ED written patient information 	<p>Ensure patient understands problem, treatment, follow up and is safe for discharge home</p>
<p>Follow up appointments</p>	<ul style="list-style-type: none"> • Verbal instructions from NP (Emergency) • Written instructions/referral for GP/ Plastics Unit (if applicable) • OPD appointment referral faxed (if applicable) 	<p>Ensure patient understands problem, treatment, follow up and is safe for discharge home</p>

	Nurse Practitioner – Emergency Services CLINICAL PRACTICE GUIDELINE INJURY - HAND	JOONDALUP HEALTH CAMPUS
--	--	-----------------------------------


Medication Instructions	<ul style="list-style-type: none"> • Verbal instructions from NP (Emergency) • Written information as per the Hospital Pharmacy on medications dispensed. 	Ensure patient understands problem, treatment, follow up and is safe for discharge home
POP care	<ul style="list-style-type: none"> • Verbal instructions from NP (Emergency) • Plaster check 24 – 48 hrs with GP • ED written patient information 	Ensure patient understands problem, treatment, follow up and is safe for discharge home
Certificates	<ul style="list-style-type: none"> • Absence from work certificates • WC certificate 	Appropriate documentation completed
Letters	<ul style="list-style-type: none"> • GP letter • Plastics referral 	Ensures continuity of care and referral to health care team

Medications	Outcomes
--------------------	-----------------

All medications will be stored, labelled and dispensed in accordance with hospital policy and relevant legislation ^[7]

Simple analgesia ^[8] S2 Mild pain	Paracetamol 500mg: 1 or 2 tablets 4-6/24, not to exceed 8 tablets in 24 hrs. Children: 15 mg/kg 4 hourly up to 4 times a day. Not to exceed 4 doses in 24 hours PAINSTOP DAY: 0.6 - 0.8 MLS/KG ⁽⁶⁾	Patients given analgesia appropriate to allergies, current medications and past medical history Analgesia requirements determined by ongoing assessment of pain and adequate analgesia provided Patients with excessive pain or pain unrelieved by analgesia need review by EP
S4 ^[8] Moderate	ADD to paracetamol if still in pain Naproxen 500 mg initially then 250 mg 6 – 8 hourly OR Instead of Paracetamol, Panadeine Forte: 1 -2 tablets 4– 6/24, not to exceed 8 tablets in 24 hrs. Children; Ibuprofen: 10 mg/kg 3-4 times daily to maximum of 600 mg in 24 hours ⁽⁷⁾ If NSAIDS contraindicated, Tramadol Adults and Children > 12 years Contraindicated in epilepsy, SSRI use Caution in the Elderly – Maximum 300 mg daily Oral: 50-100mg QID, maximum 400mg over 24 hours OR Intravenous: 50-100mg QID, maximum 600mg over 24 hours	Patients with excessive pain or pain unrelieved by analgesia need review by EP

<p>Narcotic Analgesia ^[8] S8 Severe Reassess</p>	<p>ADD to paracetamol + NSAID if still in pain</p> <p>Currently NPs require Medical Prescription for Schedule 8 medication</p> <p>Oxycodone: Adults only; Oral: 5mg every 4 hours OR Morphine Adults; Intramuscular/intravenous: 2.5mg then incremental doses to a maximum total dose of 10mg (given over period of 30 minutes) Children; IM – 0.2 mg/kg IV: 0.1- 0.2 mg/kg/dose given in titrated doses: <i>IF PAIN NOT CONTROLLED WITH ALL 3 AGENTS, REFER TO ED CONSULTANT</i></p>	
<p>Anti-emetic ^[8] S4</p>	<p>Metoclopramide hydrochloride: Oral/IM/IV:10-20mg 8/24 Prochlorperazine: Oral 5-10mg 8-12/24, if acute IM deep 12.5 mg 8/24. Not in children</p>	
<p>Intravenous Fluids</p>	<p>0.9% Sodium Chloride Intravenous Solution: IV: 5-10mls 0.9% Sodium Chloride flush 6/24 and prn post cannulation. IV Infusion: 0.9% Sodium Chloride 1000ml 6-12/24 titrated to patient requirements. For children discuss with EP.</p>	

	Nurse Practitioner – Emergency Services CLINICAL PRACTICE GUIDELINE INJURY - HAND	
--	---	---

Vaccine	Absorbed diphtheria and tetanus toxoids (ADT) 0.5ml intramuscular Injection or Tetanus Toxoid: 0.5ml IM injection Tetanus Immunoglobulin intramuscular Injection <i>Refer to Australian Immunisation Handbook 8th Edition - section on Immunisation for tetanus prone wounds - for dosage regimen (dependent upon previous immunisation status and type of exposure) Available @ http://www1.health.gov.au/immhandbook/</i>	
----------------	---	--

Clinical Audit Evaluative strategies

Missed problem	Emergency Department x-ray review	
Unexpected representation	Emergency Department attendance register and NP (Emergency)clinical log	

References

1. Freeman, P., Hand injuries, in Textbook of Adult Emergency Medicine. 2004, Churchill Livingstone: Sydney. p. 142-147.
2. McRae, R. and M. Esser, Practical Fracture Treatment. 4th Ed. 2002, Sydney: Churchill Livingstone.
3. Decker, W. Hand Injury, Soft Tissue. [eMedicine] 2004 July 15 [cited 2006 Feb 15]; Available from: <http://www.emedicine.com/emerg/topic225.htm>.
4. Fraser, W. Fractures, Hand. [eMedicine] 2005 Dec 1 [cited 2006 Feb 15]; Available from: <http://www.emedicine.com/EMERG/topic197.htm>.
5. McNemar, T., J. Wright Howell, and E. Chang, Management of metacarpal fractures. Journal of Hand Therapy, 2003. **16**(2): p. 143.
6. eTG 2006. Complicated Wounds. [cited 2006 Mar 14]; Available via Hospital Intranet
7. JHC Hospital Medication Storage and Administration Policy. .Available via Hospital Intranet
8. eMIMS 2006.[cited 2006 Mar 16]; Available via Hospital Intranet


Authorship and endorsement (This Guideline has been developed in collaboration with the JHC ENP CPG Review Committee)

This CPG was written by:

Bronwyn Nicholson
Emergency Nurse Practitioner
Joondalup Health Campus

Terry Jongen
Emergency Nurse Practitioner Candidate
Royal Perth Hospital

Key to terms	Appendix
CPG- Clinical Practice Guideline	Joondalup Health Campus Emergency Department
DVA- Department of Veteran Affairs	Adult Guidelines

	<p style="text-align: center;">Nurse Practitioner – Emergency Services CLINICAL PRACTICE GUIDELINE INJURY - HAND</p>	
--	---	---

<p>EP- Emergency Physician PS- Pain Score S1-S4- Schedule of the drug administration act LMO- Local Medical Officer MVIT – Motor Vehicle Insurance Trust NP (Emergency)- Nurse Practitioner – Emergency Services OP- Outpatients WC- Work cover</p>	<p style="text-align: center;">Care of Amputated Body Parts</p>
<p>Date written: August 2006 Reviewed: N/A</p>	<p>Review date: August 2008</p>

Joondalup Health Campus
EMERGENCY DEPARTMENT ADULT GUIDELINES

CARE OF AMPUTATED BODY PARTS

All amputated body parts should be cared for in an optimal manner until advice has been obtained from the surgeon. Do not discard any body part until after consultation.

If re-plantation is to occur, it should be done within six hours of amputation.

Care of the amputated part

- Wash any debris off the part with normal saline (room temperature).
- Wrap the body part in saline soaked gauze.
- Place the gauze wrapped body part in a sealed plastic bag.
- Place the sealed plastic bag in an ice slurry (DO NOT PLACE AN AMPUTATED BODY PART DIRECTLY ON ICE).
- Transport the body part with the patient to the receiving facility.