



*Royal Perth Hospital*  
 Nurse Practitioner – Emergency Services  
**CLINICAL PRACTICE PROTOCOL**  
**INJURY - ANKLE**



<b>Scope</b>		<b>Outcomes</b>
<b>Nurse Practitioner</b>	<ul style="list-style-type: none"> <li>• Ankle injury, pain, swelling or deformity</li> </ul>	Identify patients suitable for ED NP CPG
<b>Medical Practitioner +/- Nurse Practitioner</b>	<ul style="list-style-type: none"> <li>• Compound # / obvious fracture dislocation/ dislocation</li> <li>• Neurovascular compromise</li> <li>• Multiple injuries</li> <li>• Altered conscious state including effects of drugs / alcohol</li> <li>• History consistent with collapse</li> </ul>	Identify patients not suitable for ED NP CPG and redirect ED NP Mx to usual ED care with ED NP part of the ED team.
<b>Initial Assessment &amp; Interventions</b>		<b>Outcomes</b>
<b>Primary survey assessment</b>	<ul style="list-style-type: none"> <li>• Airway</li> <li>• Breathing</li> <li>• Circulation</li> </ul>	Abnormal primary survey identified → exit CPG
<b>History</b>	<ul style="list-style-type: none"> <li>• MIST Mechanism, injuries sustained, signs-vitals, treatment- given pre hospital management- time</li> <li>• Range of movement / Ability to weight bear</li> <li>• Deformity</li> <li>• Past medical history / medications</li> <li>• Allergies / immunisations</li> <li>• Last food / fluids</li> <li>• Compensable status - MVIT / WC / DVA / Private Insurance</li> </ul>	Exclusion criteria identified → exit CPG
<b>Neurovascular assessment</b>	<ul style="list-style-type: none"> <li>• Color</li> <li>• Warmth</li> <li>• Movement</li> <li>• Sensation</li> <li>• Capillary refill</li> <li>• Peripheral pulses</li> </ul>	Neurovascular compromise → exit CPG
<b>Focused clinical assessment</b>	<ul style="list-style-type: none"> <li>• Ottawa Ankle Rules <sup>[1]</sup> –see Appendices</li> <li>• Open wound see Open Wound CPG</li> </ul>	Determine need for ankle x-ray Identify patients for foot injury CPG
<b>Pain assessment</b>	<ul style="list-style-type: none"> <li>• Pain scale</li> </ul>	Determine need for and type of analgesia
<b>Analgesia / First Aid</b>	<ul style="list-style-type: none"> <li>• First aid               <ul style="list-style-type: none"> <li>- rest</li> <li>- ice / immobilisation</li> <li>- compression</li> <li>- elevation</li> </ul> </li> <li>• Administration of analgesia (see medications)</li> </ul>	Reduction / relief of pain Minimise / prevent swelling



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Working diagnosis and Investigations		Outcomes
<b>Imaging</b>	<ul style="list-style-type: none"> <li>No imaging required if               <ul style="list-style-type: none"> <li>- patient able to weight bear</li> <li>- no bony or focal tenderness <sup>[1]</sup></li> </ul> </li> </ul>	
	<ul style="list-style-type: none"> <li>Ankle x-ray required                Pain in malleolar zone and               <ul style="list-style-type: none"> <li>- +/- bony tenderness at posterior edge or tip of lateral malleolus</li> <li>+/- bony tenderness at posterior edge or tip of medial malleolus</li> <li>+/- inability to weight bear both immediately and in the ED</li> </ul> </li> <li>Foot x-ray if pain in navicular region, including bony tenderness at base of 5<sup>th</sup> metatarsal or base of navicular bone <sup>[1, 2]</sup></li> </ul>	Identify specific injury and determine patient management
<b>Pathology</b>	<ul style="list-style-type: none"> <li>Not routinely indicated but consider necessity for IV access and insert cannulae if required</li> </ul>	Ongoing assessment of need for intravenous access
Interpretation of results (diagnostic features) and management decisions		Outcomes
<b>No fracture seen and weight bearing</b> <sup>[2, 3]</sup>	<ul style="list-style-type: none"> <li>ED NP review with view to discharge</li> <li>patient education / health promotion</li> <li>follow-up appointment with GP if required</li> </ul>	Patient discharged
<b>No fracture seen and non-weight bearing</b> <sup>[2, 3]</sup>	<ul style="list-style-type: none"> <li>ED NP R/V with view to discharge</li> <li>Tubigrip application and LMO review in 1/52</li> <li>patient education / health promotion</li> <li>follow-up appointment with LMO if required crutches</li> </ul>	Patient discharged
<b>Simple, undisplaced stable # with no component of the # at the level of ankle mortise</b> <sup>[4]</sup>	<ul style="list-style-type: none"> <li>ED NP review with view to discharge</li> <li>Patient education/health promotion</li> <li>Follow-up appointment with Fracture Clinic 5-7 days</li> <li>Below knee POP</li> <li>Crutches</li> <li>± referral to physiotherapy</li> <li>± referral to care co-ordination</li> </ul>	Patient discharged
<b>Displaced medial, lateral or posterior malleolar #</b>  <b>Medial Malleolar # with lateral ligament damage</b>	<ul style="list-style-type: none"> <li>ED NP review with view to referral to Orthopaedic Unit <sup>[5]</sup></li> <li>RICE</li> <li>R/V and maintain adequate analgesia</li> <li>Monitor neurovascular perfusion of foot</li> <li>Below knee POP backslab if unstable</li> </ul>	Assessment by Orthopedic Unit



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<p><b>Lateral malleolar # with deltoid ligament damage</b></p> <p><b>Fibula # at or proximal to the tibiotalar joint line</b></p> <p><b>All bi and trimalleolar, intraarticular, or pilon #s <sup>[4, 5]</sup></b></p>		<p>Assessment by Orthopedic Unit</p>
<b>Pathology</b>	Not required	
<b>Associated care</b>	<ul style="list-style-type: none"> <li>Consider ECG for patients who require surgical intervention</li> <li>Consider IV fluids for patients who require fasting for surgical intervention</li> </ul>	
<b>Acute Referral</b>	<ul style="list-style-type: none"> <li>Referral to               <ul style="list-style-type: none"> <li>+/- physiotherapy</li> <li>+/- care coordination</li> <li>+/- interpreter</li> <li>+/- allied health etc.</li> </ul> </li> </ul>	
<b>Patient Discharge Education</b>		<b>Outcomes</b>
<b>When to return</b>	<ul style="list-style-type: none"> <li>Verbal instructions from ED NP</li> <li>ED written patient information</li> </ul>	Ensure patient understands problem, treatment, follow up and is safe for discharge home
<b>Follow up appointments</b>	<ul style="list-style-type: none"> <li>Verbal instructions from ED NP</li> <li>Written instructions for LMO/Fracture clinic (if applicable)</li> <li>OPD appointment book (if applicable)</li> </ul>	Ensure patient understands problem, treatment, follow up and is safe for discharge home
<b>Medication instructions</b>	<ul style="list-style-type: none"> <li>Verbal instructions from ED NP</li> <li>Contact ED Pharmacist to provide medication education for patient when available. Written information as per the Hospital Pharmacy on medications dispensed.</li> </ul>	Ensure patient understands problem, treatment, follow up and is safe for discharge home
<b>POP care</b>	<ul style="list-style-type: none"> <li>Verbal instructions from ED NP</li> <li>Plaster check 24 hrs with LMO</li> <li>ED written patient information</li> </ul>	Ensure patient understands problem, treatment, follow up and is safe for discharge home
<b>Safety assessment i.e. crutches</b>	<ul style="list-style-type: none"> <li>Appropriate fitting of crutches and ambulation instructions from ED NP / physiotherapist</li> </ul>	Ensure patient understands problem, treatment, follow up and is safe for discharge



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	<ul style="list-style-type: none"> <li>Patients &gt; 60 yrs of age</li> <li>consider referrals</li> </ul>	home
<b>Other Referrals</b>	<ul style="list-style-type: none"> <li>Referrals may be made for specific patient problems or as required to;               <ul style="list-style-type: none"> <li>care coordination</li> <li>social work</li> <li>physiotherapy</li> <li>drug and alcohol counselor</li> <li>aboriginal liaison officer</li> </ul> </li> </ul>	Ensure patient understands problem, treatment, follow up and is safe for discharge home
<b>Certificates</b>	<ul style="list-style-type: none"> <li>Absence from work certificates</li> <li>WC certificate</li> <li>Certificate of attendance</li> </ul>	Appropriate documentation completed
<b>Letters</b>	<ul style="list-style-type: none"> <li>Local medical officer letter</li> </ul>	Ensures continuity of care and referral to health care team
<b>Medications</b>		<b>Outcomes</b>
All medication will be stored, labelled and dispensed in accordance with hospital policy and relevant legislation <sup>[6]</sup>		
<b>Simple analgesia</b> <sup>[7]</sup>	<b>Paracetamol 500mg:</b> 1 or 2 tablets 4-6/24, not exceeding 8 tablets in 24 hrs	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
<b>Mild NSAIDS</b> <sup>[7]</sup>	<b>ADD to paracetamol if still in pain</b> <b>Naproxen</b> Initially 500 mg then 250 mg 6 –8 hourly	
<b>Moderate</b>	<b>If NSAIDS contraindicated,</b> <b>Tramadol Oral:</b> 50-100mg QID, maximum 400mg over 24 hours OR <b>Tramadol Intravenous:</b> 50-100mg QID, maximum 600mg over 24 hours	
<b>Narcotic Analgesia</b> <sup>[7]</sup>	<b>ADD to paracetamol + NSAID if still in pain</b>  <b>NP a needs Medical prescription for Schedule 8 drugs</b>  <b>Morphine</b> Intramuscular/intravenous: 2.5mg then incremental doses to a maximum total dose of 10mg (given over period of 30 minutes) <b>IF PAIN NOT CONTROLLED WITH ALL 3 AGENTS, REFER TO ED CONSULTANT</b>	
<b>Anti-emetic PRN</b> <sup>[7]</sup>	<b>Metoclopramide hydrochloride:</b> Oral/IM/IV: 10-20mg 8/24 <b>Prochlorperazine:</b> Oral 5-10mg 8-12/24, initial 20mg po if acute, IM deep 12.5 mg 8/24	
<b>Intravenous fluids</b>	<b>0.9% Sodium Chloride Intravenous fluid:</b> 5-10ml flush of Intravenous cannulae 6/24 or Infusion at 8-12hrly titrated to patients requirements	



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**Clinical audit evaluation strategies**

<b>Unexpected representation</b>	Emergency Department attendance register and ED NP clinical log	
<b>Missed problem</b>	Emergency Department x-ray review	

**References**

1. Broomhead, P. and P. Stuart, *Validation of the Ottawa Ankle Rules in Australia*. Emergency Medicine, 2003. **15**(2): p. 126 - 132.
2. McRae, R. and M. Esser, *Practical Fracture Treatment. 4th Ed.* 2002, Sydney: Churchill Livingstone.
3. *Ankle sprain*. [National Guidelines Clearinghouse] c2003 2003 Jul 26 [cited 2006 Feb 24]; Available from: <http://www.guidelines.gov>.
4. *Ankle and Foot*. [National Guidelines Clearinghouse] c2005 [cited 2006 Feb 24]; Available from: <http://www.guidelines.gov>.
5. Naradzay, J. *Fractures, Ankle*. [eMedicine] c2006 2006 Jan 3 [cited 2006 Feb 15]; Available from: <http://www.emedicine.com/emerg/topic188.htm>.
6. Unknown, *Hospital Medication Storage and Administration Policy*.
7. eMIMS. [eMIMS] c2006 2006 [cited 2006 Mar 16]; Available from: <http://www.use.hcn.com.au/html/wah/godirect.html>.

**Authorship and endorsement**

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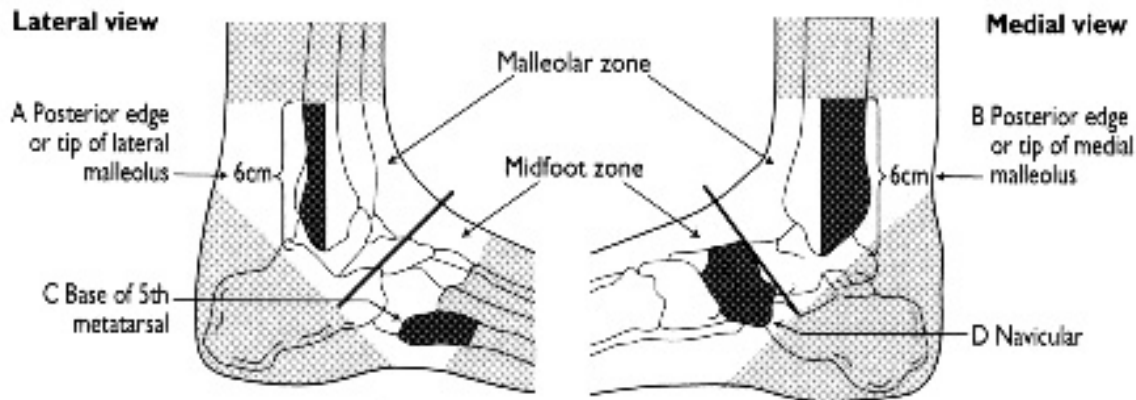
**This CPG has been reviewed and is endorsed by:**

Chair: Mr. Sudhaker Rao  
The Trauma Committee of Royal Perth Hospital  
Head of Trauma Service and General Surgery

Clinical Prof. Mark Khangure  
Division Director  
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Key to terms	Appendices
<b>ED NPC-</b> Emergency Department Nurse Practitioner Candidate <b>EP-</b> Emergency Physician <b>PS-</b> Pain Score <b>S1-S4-</b> Schedule of the drug administration act <b>LMO-</b> Local Medical Officer <b>OP-</b> Outpatients <b>CPG-</b> Clinical Practice Guideline <b>WC-</b> Work cover <b>MVIT –</b> Motor Vehicle Insurance Trust <b>DVA-</b> Department of Veteran Affairs	Pain scale Ottawa Ankle Rules
<b>Written:</b> March 2006 <b>Reviewed:</b> N/A	<b>Review date:</b> March 2008



An ankle x ray series is required only if there is any pain in malleolar zone and any of these findings:

- Bone tenderness at A
- Bone tenderness at B
- Inability to bear weight both immediately and in emergency department

A foot x ray series is required only if there is any pain in midfoot zone and any of these findings

- Bone tenderness at C
- Bone tenderness at D
- Inability to bear weight both immediately and in emergency department