### Adult Emergency Nurse Protocol

**LOWER LIMB INJURY**

**PR390**

**Aim:**
- Early identification and treatment of life threatening conditions e.g. uncontrolled haemorrhage
- Early identification of limb at risk
- Early initiation of treatment/clinical care and symptom management within benchmark time.

### Assessment Criteria:

On assessment the patient should have one or more of the following signs / symptoms:

- Swelling to limb
- Point tenderness over bone
- Pain associated with the injury
- Loss of function to part of that limb
- Obvious deformity

### Escalation Criteria:

Immediate life-threatening presentations that require escalation and referral to a Senior Medical Officer (SMO):

- Presentation meets trauma criteria
- Patients in whom a pain scale cannot be accurately determined
- Intoxicated or drug affected patients

### Primary Survey:

- **Airway:** patency
- **Breathing:** resp rate, accessory muscle use, air entry, SpO₂
- **Circulation:** perfusion, BP, heart rate, temperature
- **Disability:** GCS, pupils, limb strength

Notify CNUM and SMO if any of the following red flags is identified from Primary Survey and Between the Flags criteria.

<table>
<thead>
<tr>
<th>Flag</th>
<th>Description</th>
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<tbody>
<tr>
<td>Airway – at risk</td>
<td>RR &lt; 5 or &gt;30 /min</td>
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<td>Disability – decreased conscious level</td>
<td>GCS ≤ 14 or a fall in GCS by 2 points</td>
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<td>Exposure</td>
<td>Temperature &lt; 35.5°C or &gt; 38.5°C</td>
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<td>BGL &lt; 3mmol/L or &gt;20mmol/L</td>
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### History:

- Presenting complaint
- Allergies
- Medications: Anticoagulant Therapy, Anti-hypertensives, Diabetic meds, Analgesics, Inhalers, Chemotherapy, Non-prescription meds, Any recent change to meds
- Past medical history e.g. arthritis, osteoporosis, prosthetic joint or surgical pins etc.
- Last menstrual period, last ate
- Events leading to presentation e.g. recent trauma, mechanism of injury, timing, associated Sx.
- Onset of symptoms
- Pain history (pain scale, PQRST)
- Associated symptoms e.g. pop / click / snap heard with injury, locking / giving way of joint, ability to weight bear

### Systems Assessment:

**Inspection**

- Bruising / Swelling
- Deformity / Scars / Wounds
- Skin tenting or skin mottling
- Cyanosis

**Palpation**

- Pain along distal 6cm of proximal fibula
- Pain along distal 6cm of posterior edge of the lateral malleolus
- Pain along distal 6cm of posterior edge of the medial malleolus
- Distal pulse
- Capillary return < 3secs

**Movement**

- Able to weight-bear after incident
- Able to mobilise >4 steps
- Flexion and extension of foot
- Flexion and extension of leg >90°:Internal and external rotation
- Flexion and extension of foot
- Inversion and eversion of foot
- Circumduction of foot

**Sensation**

- Medial edge of foot (saphenous nerve)
- Lateral edge of foot (sural nerve)
- Across mid-foot region (superficial peroneal nerve)
- Web space between big toe & adjacent toe, 1cm inwards (deep peroneal nerve)

**Pain** Location of pain (PQRST)
Notify CNUM and SMO if any of the following red flags is identified from History or Systems Assessment

- Mechanism of major trauma
- Gross deformity / Open Fracture
- Severe pain
- Acutely absent pulse
- Neurovascular compromise
- Uncontrollable bleeding
- Gross deformity / Open Fracture
- Acutely absent pulse
- Uncontrollable bleeding

Notices / Diagnostics:

Laboratory / Radiology:
- Pathology: Not generally indicated unless surgery
- Radiology: Refer to local nurse initiated STOP

Investigations / Diagnostics:

Laboratory / Radiology:
- Pathology: Not generally indicated unless surgery
- Radiology: Refer to local nurse initiated STOP

Nursing Interventions / Management Plan:

Resuscitation / Stabilisation:
- Oxygen therapy & cardiac monitor [as indicated]
- IV cannulation [if IV analgesia required]
- Hourly neurovascular observations

Supportive Treatment:
- Nil By Mouth (NBM) if for OT
- Monitor neurovascular status (hourly or as clinically indicated)
- Monitor pain assessment / score
- Splinting – Backslab (as clinically indicated)

Practice Tips / Hints: Peripheral Nerves of the Lower Limb

http://www.orthopaedicsone.com/display/Clerkship/Peripheral+Nerves+and+Arteries+of+the+Lower+Extremity

Further Reading / References:

Acknowledgements:
- SESLHD Adult Emergency Nurse Protocols were developed & adapted with permission from:
  - Murphy, M (2007) Emergency Department Toolkits. Westmead Hospital, SWAHS
  - Hodge, A (2011) Emergency Department, Clinical Pathways. Prince of Wales Hospital SESLHD.

Revision & Approval History

<table>
<thead>
<tr>
<th>Date</th>
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<tbody>
<tr>
<td>September 2013</td>
<td>0</td>
<td>Developed by Wayne Vamell - Clinical Nurse Consultant, Emergency Prince of Wales Hospital</td>
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<tr>
<td>December 2013</td>
<td>1</td>
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<tr>
<td>February 2014</td>
<td>2</td>
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<td>September 2014</td>
<td>4</td>
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