

Clinical Guideline

WATCH – MAJOR BURNS

SETTING	Wales and West Acute Transport for Children
FOR STAFF	WATCH Team, South West and Wales District General Hospital medical and nursing teams.
PATIENTS	Children referred to WATCH from district general hospitals with burns involving >10% body surface area.

GUIDANCE

Major burns in paediatrics are a highly specialised area and there is great variability in the treatment depending on specific clinical circumstances. Early contact with the Burns Surgeon to agree a management plan is highly recommended.

In major burns, the best possible care requires a compromise between conflicting principles and these decisions must be guided by regular consultation with subspecialists.

More detailed guidelines are available (see “Related Documents” below); the management summary on page 2 of this document is intended as a rapid reference rather than a replacement for either full guidelines or expert clinical advice. It is available on the WATCH website (www.watch.nhs.uk).

GLOSSARY	GCS	Glasgow Coma Scale
	TBSA	Total body surface area

RELATED DOCUMENTS	Time Critical Transfer Burns: Critical Care Management of Children Fluid Management in Paediatric Burns Burns in Children’s Emergency Department Assessment and Management All at http://www.uhbristol.nhs.uk/for-clinicians/clinical-guidelines/
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AUTHORISING BODY	WATCH Governance group
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SAFETY	Early discussion with the Burns Surgeon, Paediatric Major Trauma Team and WATCH team is recommended for advice and support.
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QUERIES	0300 0300 789
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MAJOR BURNS

The paediatric major burns service in Wales and the South West is centralised in Bristol. The Burns Service may accept referrals from other regions when there is limited capacity elsewhere.

Call 0300 0300 789 and dial option 1 for WATCH; the initial conference call will include the **WATCH consultant**, the **Paediatric Trauma Team Leader**, the **Consultant Burns Surgeon** (mobile phone via switchboard), 1st on **Consultant Anaesthetist** (x27888 via switchboard) and **Burns 24/7 referral line** (bleep 6780)

Prepare for **Time Critical Transfer by local team** (required in most cases). A checklist for Time Critical Transfer is available on the WATCH website.

RESUS ENVIRONMENT	FLUID MANAGEMENT
<p>Warm the treatment area. Use Bair Hugger and minimise exposure</p> <p>Ensure first aid is complete (tepid water for 20 minutes after injury)</p> <p>Single consultant assessment of depth and surface area of burn injury – ensure “hidden areas” e.g. scalp and back are inspected</p> <p>Cling film dressing (patch rather than circumferential)</p> <p>Document history of injury and child protection concerns</p> <p>Major non-burn injuries should be identified and stabilised. These are the most likely cause of early shock.</p>	<p>Both over- and under- resuscitation are harmful in burns.</p> <p>Use the modified Parkland formula as a starting point, but this is likely to be modified according to the clinical status of the patient – take specialist advice.</p> <p>Weight (kg) x TBSA X 2 = total fluid over 24 hours</p> <p>Half of the total to be given over the first 8 hours from the injury and half over the subsequent 16 hours.</p> <p>Include fluid boluses already given in the total fluid calculation.</p> <p>Avoid rapid catch-up if there has been a delay in fluid resuscitation.</p>
AIRWAY	ANALGESIA
<p>Senior anaesthetic review</p> <p>Indications for intubation include reduced GCS or suspicion of airway burn. Suggestive features include stridor, hypoxia or hypercapnia, burns to the face or neck</p> <p>If intubation is indicated, do not delay</p> <p>Use Ketamine, Fentanyl and Rocuronium</p> <p>Use cuffed endotracheal tube. Do not cut and tie (rather than tape) to secure (anticipate facial swelling).</p>	<p>IV Ketamine in 0.25mg/kg boluses to effect, max 1 mg/kg</p> <p>Nasal Diamorphine 0.1mg/kg for emergency pain control</p> <p>IV Paracetamol</p> <p>Oramorph for awake patients</p> <p>Avoid non-steroidal anti-inflammatory drugs</p> <p>Once intubated, maintain on infusions of Morphine, Midazolam and Rocuronium.</p>
BREATHING	ACCESS
<p>Aim for lung protective ventilation (pH>7.20, saturations >92%, higher positive end expiratory pressure (PEEP))</p> <p>Emergency bronchoscopy and lavage if particle or chemical inhalation</p>	<p>Ensure minimum of 2x peripheral IV access and urinary catheter in situ</p> <p>Arterial line may not be necessary</p> <p>Avoid central venous line unless specifically indicated</p>
CIRCULATION	EMERGENCY SURGICAL MANAGEMENT
<p>Avoid excessive IV fluid</p> <p>Accept modest tachycardia and hypotension (inflammatory response, vasodilation) as long as lactate is <2 and urine output is >0.5mL/kg/h.</p> <p>If urine output <0.5mL/kg/h, lactate rise, base excess -5 or pH <7.25 give 5mL/kg crystalloid (and repeat as required).</p> <p>Inotropic support is rarely required. Use Dopamine as first line if needed. Avoid vasopressors unless specifically advised by the burns team.</p>	<p>Fasciotomy, formal wound assessment and debridement are usually done at the Burns Centre but urgent procedures may be required before transfer (joint decision between Burns Surgeon and referring centre)</p> <ul style="list-style-type: none"> - Chest ESCHAROTOMY may be required if chest constriction compromises ventilation - Limb ESCHAROTOMY may be required if limb perfusion is compromised by circumferential burn