LRI Emergency Department

Burns Management UHL Paediatric Emergency Department Guideline

Staff relevant to:	**ED Medical and Nursing Staff**
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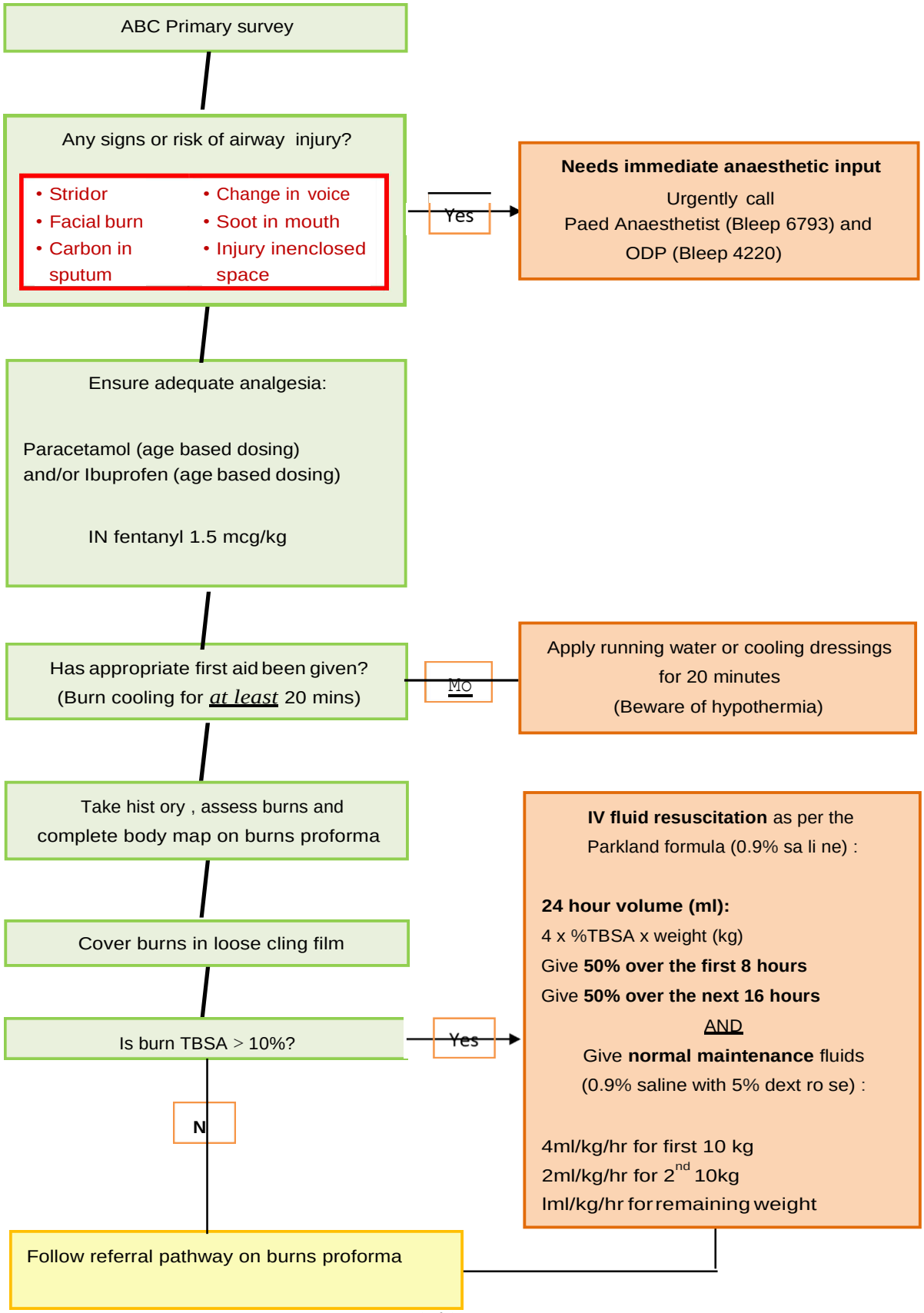
Paediatric Burns Management - Flow Chart



Paediatric Burns Management

This guideline is for the initial assessment and emergency management of paediatric patients with burns. Please use with the paediatric burns proforma.

AIRWAY AND BREATHING:

Consider 0_2

Thermal injury can lead to a critical airway

- Assess for airway compromise
  - Stridor
  - Change in voice
  - Facial burns
  - Soot in the mouth or carbon in the sputum
  - History of burn injury within an enclosed space

IF FEATURES ARE PRESENT, URGENT AIRWAY MANAGEMENT MAY BE NEEDED

Contact the Paediatric Anaesthetist and ODP immediately

Paediatric Anaesthetist Bleep 6793 ODP Bleep 4220

If intubation is required, use an uncut ETT tube to allow for any facial oedema

CIRCULATION

Careful fluid resuscitation in major burns improves survival and outcome.

Shock is *not* an early feature of burns- if a child has signs of shock on initial assessment consider other causes e.g. haemorrhage

In all burns over 10% TBSA, children should receive resuscitation fluid as per the Parkland Formula, in addition to maintenance fluids.

Parkland Formula: 4 x %TBSA xweight (kg) given as Hartmann's or 0.9%saline

This volume should be infused in the 24 hours after the burn, with 50% given in the first 8 hours from the time of the burn.

Example:

35kg child with 25% TBSA burns

Total resuscitation fluid	*=4 x %TBSA x weight*	
	***=4** x 25 x 35*	
	=3500ml in 24 hours	
Therefore:	*1750 in first 8 hours*	*=218ml/hr*
	1750 over next 16 hours	*=109ml/hr*

Standard maintenance fluids should run in addition to this.
Monitor urine output (consider urethral catheter) - **aim for urine output of 1-2ml/kg/hr**

DISABILITY AND EXPOSURE

Perform secondary survey to identify any other injuries

ANALGESIA

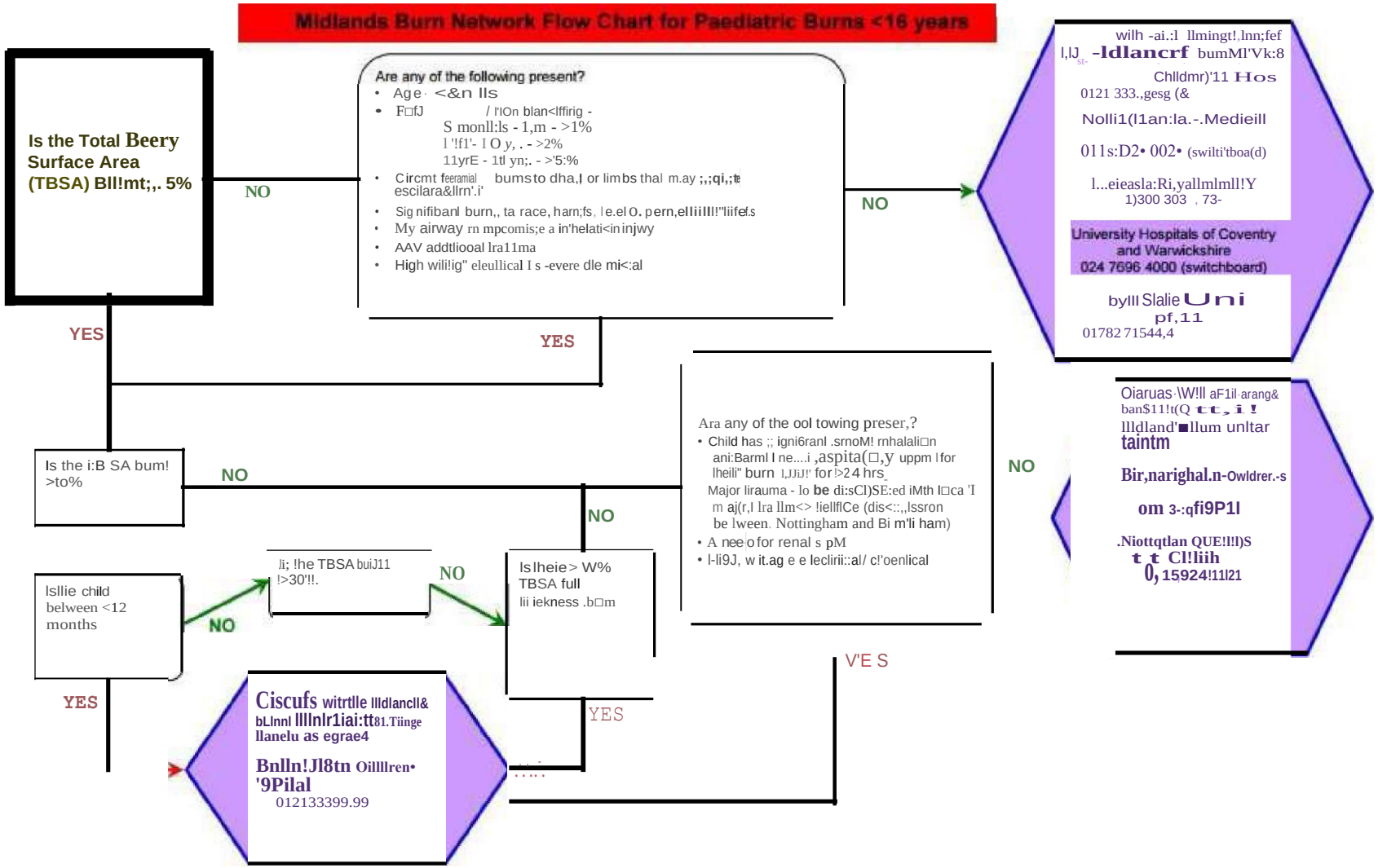
Give intranasal fentanyl early

Remember to give background analgesia:
Paracetamol and Ibuprofen (age based dosing)

Cover burns in loose cling film - this will dramatically reduce pain from the burn

REFERRAL AND TRANSFER

Follow the guidance as per the burns proforma re the referral of children with burns. For transfer the following diagram is used. If transfer to another centre is necessary discuss with the senior paediatric doctor and nurse with regards individual transfer requirements and to decide the safest route of transfer.


Midlands Burn Network Flow Chart for Paediatric Burns <16 years
Is the Total Beery Surface Area (TBSA) Bll!mt;,. 5%
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Are any of the following present?
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Burns -Children (Age 0-16 yrs)

Applies to:

Scalds (Hot liquids, steam, grease)

Fire

Contact burn (hot object)

Chemical

Electrical

Burns above 5% should have the major burns protocol activated.

Patient Details

Full Name:

DOB:

Unit no:

Seen By:

Date:

Time:

Child's weight (kg)

CAUSE FOR CONCERN

If history / examination reveals any of the following:

Trapped in a confined space

Carbonaceous sputum

Stridor, hoarse voice, Dysphagia

Severe/ multiple trauma

High voltage electrical burn.

1. Inform senior ED ST 4 + immediately
2. Contact resus
3. Contact Paediatric anaesthetist if potential/ any airway compromise

Chemical Burn.

If powder chemical ensure all powder removed before irrigation

If corrosive metal ensure any particles are removed with tweezers

Most chemicals should be irrigated for a minimum of 20 mins with water

Always refer to Toxbase online or national poisons information service.

pH on arrival

pH after 20 minutes of irrigation

Continue to irrigate and document PH every 20 mins until PH 7.

Mechanism ☐ Scald ☐ Fire ☐ Contact ☐ Other

☐ Chemical - Substance = ☐ Electrical - Needs ECG.

Account of burn:

Time of burn:

First aid given:

Who was supervising the child?

Depth of burn (use charts on pages 2 and 3):

Percentage of burn (use charts on pages 2 and 3):

PMH:

Allergies

Drug Hx:

immunisations:

Children under 2 yrs of age must have a Safeguarding form completed ☐

Pain score

0 1 2 3	4 5 6	7 8 910

Pain score: **Time:**

Mild to moderate pain (score 1-6)

Give paracetamol

And or ibuprofen

Severe pain (scores 7-10).

As for mild to moderate pain, Plus Entonox (as a holding measure)

Then:

Opiate analgesia

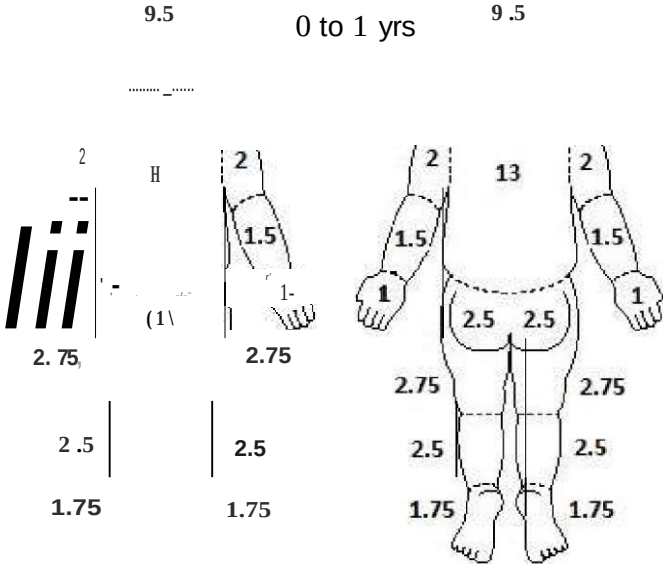
Consider the need for ametop.

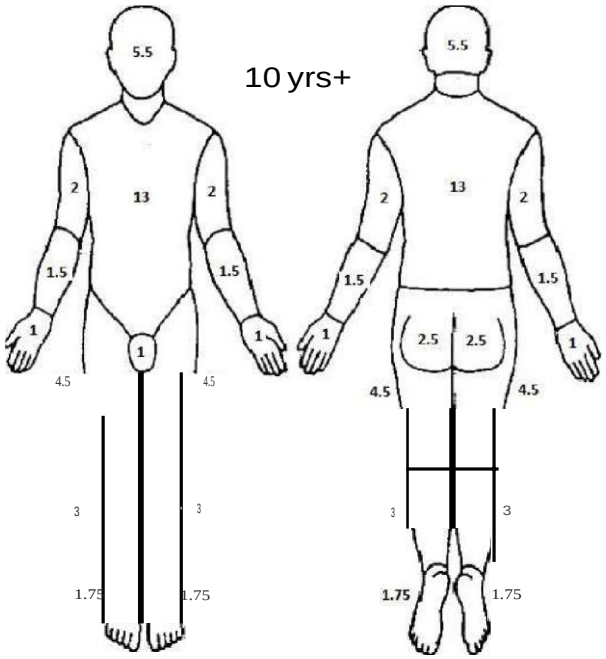
Safeguarding concerns?	Yes	No
Is there a consistent history?		
Does the injury match the description of events?		
Is the injury appropriate for the Child's developmental stage?		
Any delay in presentation has a Satisfactory explanation?		
No other injury /unexplained finding On examination?		
Are the parent and child interacting / Behaving appropriately?		

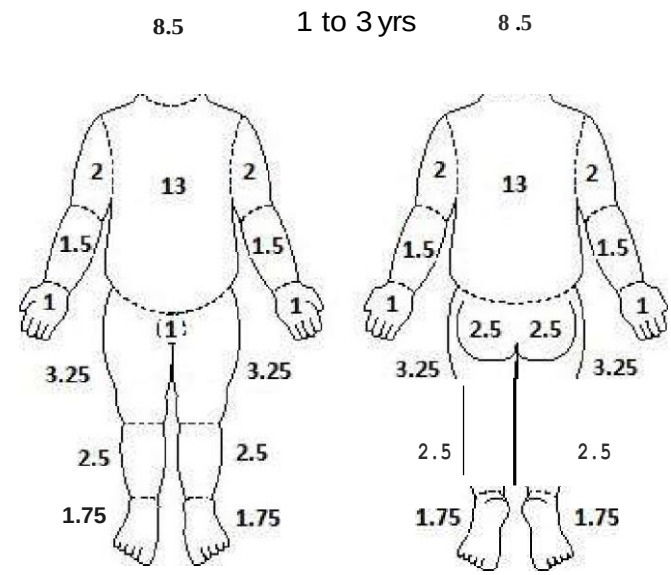
If you answered no to any of the Above, Discuss the patient with ST4+.

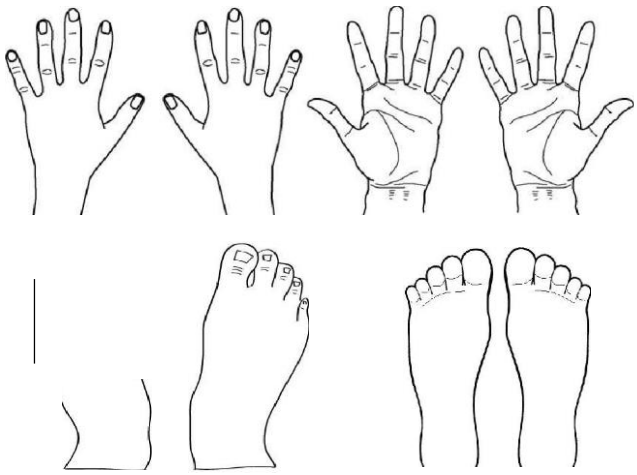
Notes continuation

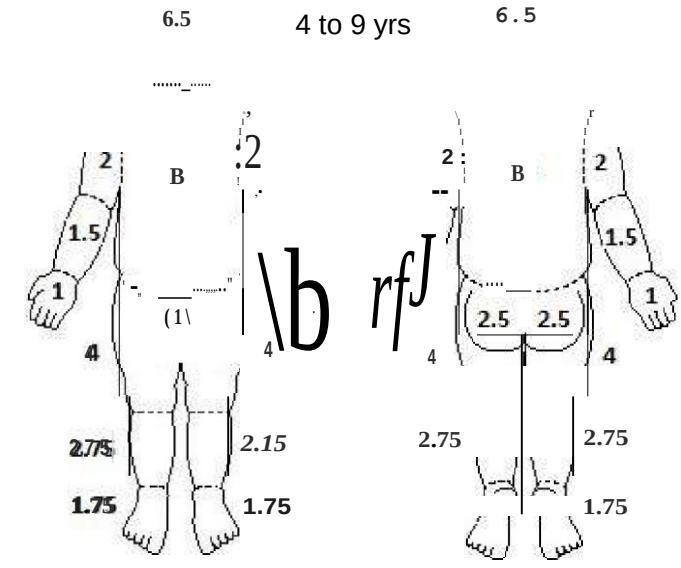
	Epidermal (superficial)	**Partial thickness** **Superficial Dermal**	**Partial thickness** **Deep Dermal**	**Full thickness**
Appearance	Red shiny	Pale pink, mottled, blistered	Cherry red, blistered	Dry, leathery, white/ black/ charred. No blisters
Blanching to pressure	Yes - brisk	Yes - brisk	No	No
Sensation	Painful	Painful	Dull	Absent











Region	% **partial thickness**	% **full thickness**
Head		
Neck		
Anterior trunk		
Posterior trunk		
Right arm		
Left arm		
Buttocks		
Genitalia		
Right leg		
Left leg		
Total		
TBSA		

Management

Management depends on Age, depth, total body surface area, site and type of burn.

Is the TBSA > 5%?
Or
Meets 'cause for concern' criteria on front page? (red box)

yes

1. Inform senior ED (ST4+) immediately
2. Contact resus
3. Contact Paediatric anaesthetist if potential for airway compromise
4. Refer to major burns proforma

1. Ongoing care to be discussed with ED senior and plastics

2.Transfer to Burns unit if admission is required

Inform plastics senior, (+/-Anaesthetics) ASAP if ventilatory support, or neurovascular compromise.

no

- Is the child < 6 months?
- Total surface area > 1%
- Areas of full thickness burn? (FTB)
- Any special areas involved?
  - Face
  - Hands / feet/ joints
  - Perineum / genitals
- Circumferential burn?
  - To chest/ limbs/ digits?

yes

- Inform Plastics SHO
- Ask for senior ED review.

Burns facilities.
Leicester Royal Infirmary: minor burns only. Referral via nerve centre.
Burns unit:
QMC Nottingham. Minor to moderate burns.
Burns centre:
BCH Birmingham minor/ moderate / severe burns.

Wound cleansing and dressing
After initial 1st aid, cover all burns with cling film to aid pain relief.
Cleansing.
1. All wounds and surrounding skin are thoroughly cleaned and remove any loose or dead skin.
2. De-roof any large blisters

Dressings.
1. Dress all burns with an antimicrobial dressing (such as Urgotul Ag.)
2. Ensure adequate padding is used (all burns lose lots of fluid)

Follow up advice.
All burns dressings need to be reviewed 48 hrs after injury, either by paeds community nurses, or BPDC (burns and plastics dressing clinic.
1. If the burn is 1% or less, or superficial dermal, refer to community nurses for re-dressing and further management.
2. Refer to BPDC via the plastics SHO if :>1%
3. Give parent or guardian burns information leaflet.
4. Give verbal advice -: regular analgesia
   : red flag advice regarding toxic shock symptoms.

Do not prescribe oral antibiotics in acute burns.