

BURN INJURY: ED MANAGEMENT - SCH

PRACTICE GUIDELINE[®]

DOCUMENT SUMMARY/KEY POINTS

This document should be used in conjunction with the following documents:

- [Burns Management](#)
- [Emergency Burns Care: Admission and Patient Transfer to CHW](#)
- [Burn Patient Emergency Assessment and Management Chart \(SMR060815\)](#)
- [Consent for Clinical Photography, 3D Imaging and Video Audio Recording \(SCN020040\)](#)

- Burn injury at SCH is managed under the direction of the General Surgical Service at SCH. All burns should be discussed with the General Surgical Registrar. (With the exception of minor simple burns).
- All children within our trauma referral network, with burns that cannot be managed locally, but who do not fulfil criteria for referral to a major burns service, should be accepted and managed at SCH.
- Complex burn injury patients must be reviewed by the General Surgical Registrar (and discussed with the Consultant) prior to possible referral or transfer to the paediatric Statewide Burn Injury Service (SBIS) at CHW. For these patients, all photos, including images of the consent form, must be emailed to kidsburns@chw.edu.au.
- For all patients with serious burns resuscitation and stabilisation take precedence.
- First aid measures, including analgesia and cooling within three hours of injury, should be instituted as early as feasible.
- Blister drainage and debridement of minor and intermediate burns, under appropriate analgesia and/or sedation, should be undertaken at the ED presentation whenever possible.

This document reflects what is currently regarded as safe practice. However, as in any clinical situation, there may be factors which cannot be covered by a single set of guidelines. This document does not replace the need for the application of clinical judgement to each individual presentation.

Approved by:	SCHN Policy Procedure and Guideline Committee	
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Team Leader:	Nurse Practitioner	Area/Dept: Emergency Department SCH

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This Guideline may be varied, withdrawn or replaced at any time.

CHANGE SUMMARY

- Updated key points and made changes throughout the document. Recommend reading the whole document.

READ ACKNOWLEDGEMENT

- Relevant staff in the SCH Emergency Department should read & acknowledge they understand the contents of this document.

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Refer to [burns flowchart](#).

Burn Injury, Initial management in the Emergency Department

Burn injury is a common presentation to the Emergency Department. The severity of a burn is determined by the area, depth and location of the injury. Treatment, referral and transfer of care will be influenced by a number of factors including the mechanism of injury, age of the child and social considerations. First aid and initial management of the burn site is important as it limits tissue damage and subsequent morbidity.

Purpose and Scope

The purpose of this guideline is to ensure that Emergency clinicians at SCH are informed about timely local processes for consultation, admission, referral and treatment modalities for burn injured patients at SCH.

This document aligns with relevant sections in the Network guideline "[Burns Management](#)" which provides detailed information on burn wound assessment, burn surface area calculation (TBSA) descriptors for assessment of depth, fluid management, wound management, types of dressings and application techniques.

Inclusion Criteria

All children presenting with burn injury, including friction burns.

Exclusion Criteria

Oesophageal burn

Ophthalmic burn

Initial Management

Emergency pathways on clinical assessment and initial treatment of a burn injury, refer to: [Burn Patient Emergency Assessment and Management Chart \(SMR060815\)](#)

General trauma management principles apply to managing a complex burn injury or a burn associated with other major injuries: primary, secondary survey and simultaneous resuscitation protocols should be followed (EMSB^[1], APLS^[2], Herndon^[3], International guideline.^[5]

Immediate first aid measures should be instituted for all burn injuries-

- Stop the burning process: remove clothing and jewellery from burned areas unless adherent to the skin (Leave in place and seek surgical review).
- Cool the burn wound: cold running tap water is most effective. ^[2] As an alternative, cold tap water may be used to spray (using a dedicated container), pour, irrigate, soak or continuously sponge the burn for a minimum of 20 minutes within 3 hours of the injury. Do not apply ice or ice water. Localise cooling efforts to the affected areas and keep the remainder of the child warm and dry. Maintain body temperature above 35°C. Cooling of affected burn injury sites may be rotated. The cooling period may be extended or the wound covered with a non-adherent dressing (cling film) to provide an analgesic effect

until specialist review or definitive treatment is commenced. Occlusion of the wound also reduces evaporative losses from the wound surface.

- Analgesia is important. Clinical judgement should be used to initiate oral, intranasal, intravenous and/or inhaled sedation depending on injury severity, pain and procedural interventions required.

Context of Care

Children's Hospital Westmead is the designated NSW Paediatric Statewide Burn Service for children who meet transfer criteria.^[4], and have complex or major burn injury.

Criteria include:

- Intubated patient
- Inhalation injuries
- Head/neck burns
- >10% TBSA
- Burns with significant comorbidities
- Associated trauma
- Significant pre-existing medical disorder
- Circumferential burn to limbs or chest that compromise circulation or respiration
- Significant electrical including lightning injuries
- Significant chemical e.g. hydrofluoric acid

Children fulfilling these criteria who present to SCH ED or who are primary retrievals must be initially reviewed by the ED Senior Medical Officer and by the General Surgical Registrar.

Transfer to the paediatric SBIS at CHW is arranged through the CHW Burns Registrar on call for BURNS via CHW switch. Transfer is organised by SCH and may include the involvement of NETS and CHW PICU.

Refer to Network guideline "[Emergency Burn Care: admission and patient transfer to CHW](#)". A photo of the 'Consent for Clinical Photography' (Form SCN020040) must accompany clinical photos sent to the CHW Burn Registrar when seeking advice or transfer by telephone consultation. In addition, all photos, including the consent form, must be emailed to kidsburns@chw.edu.au.

Stabilised children must not be transferred with wet dressings. Wounds should be lightly covered, not circumferentially wrapped, with cling film OR Bactigras™ at the direction of the CHW Burn Registrar. Debridement of blisters and definitive dressing application for complex burns are not undertaken at SCH, as assessment will be required at CHW upon specialist review. Affected limbs should be elevated.

All children within our trauma referral network, with burns that cannot be managed locally, but who do not fulfil criteria for referral to a major burns service, can be accepted and managed at SCH.

Children with burns that arrive at SCHED as primary retrievals or presentations, who fulfil criteria for referral to a major burns service, should have their burns and management discussed with the SCH surgical consultant on call for trauma, prior to referral to a major burns unit. Some of these patients may, after discussion, remain at SCH with ongoing consultation with the burns unit.

Regardless of the decision to either retain the patient for management at SCH as an inpatient or outpatient, or transfer of care to CHW, burn management guidelines with regards to first aid, resuscitation and dressings should be followed from the outset.

Non-complex burn injury is managed at SCH by a multidisciplinary medical, nursing and allied health team, in most instances, as an outpatient.

Intermediate/Moderate Burn Injury (REFERRAL/CONSULTATION)^[4]

- 5% to 10% TBSA
- Suspected deep dermal or full thickness burn
- Burns of moderate extent or depth to hands, feet, face/neck, genitalia, perineum or major joints
- Chemical burns
- Electrical burns
- Burns in patients with pre-existing medical conditions
- Suspected non-accidental injury, assault or self-inflicted
- Under 1 year of age

Sydney Children's Hospital provides tertiary level surgical services (general, plastics and hand), specialist nurse consultancy, allied health support and a Child Protection Unit with capacity to manage the complex issues associated with some burns. As such, any child who presents to the SCH ED who meets the 'Referral/Consultation' criteria listed should be initially reviewed by the ED Senior Medical Officer and must be discussed with or reviewed by the SCH General Surgical Registrar in the first instance, prior to contact with CHW Burn Registrar.

There may be occasions where there are specific indications for local admission such as analgesia management or social issues. These cases will be under the direction of the SCH General Surgical Consultant via the General Surgery Registrar. In principle, children should be managed close to home whenever appropriate.

Minor or Non-complex Burn Injury

Minor/non-complex burns can be managed at SCH. This includes:

- Those involving less than 5% TBSA
- Superficial or partial thickness injury
- Superficial depth or minor extent of injury to the face/neck, hands, feet, major joints
- No adverse social issues precluding outpatient management

Children fulfilling these criteria can be managed locally, as an SCH outpatient in most circumstances. On occasions, other issues may indicate admission which can occur at SCH.

This will occur under the direction of the SCH General Surgical Consultant via the General Surgery Registrar.

ED assessment and treatment of non-complex injuries should be guided by senior ED clinicians or by the General Surgical Registrar where indicated. Referral to the Plastics service is NOT required in the first instance but may be sought by the General Surgical team: this includes minor or non-complex burns to special areas such as finger pulps and pads of hands or feet and small, superficial splash injury to areas of the face or neck.

Unless directed by the SCH General Surgical Registrar, children fitting these criteria do not need to be referred directly to the CHW Burns and Plastics Treatment Centre (BPTC) for outpatient management. If a child is deemed appropriate for referral to the BPTC at CHW for assessment and dressing change, interim management will be as recommended by the SCH General Surgical Registrar and an appointment facilitated. For example, this may include children who live closer to CHW.

Children with non-complex burn injury, where the decision is to manage at SCH, should be referred to the weekly Burn Clinic in outpatients. If earlier or more frequent reviews are indicated, additional appointments can be arranged via the General Surgical Registrar at an Outpatient surgical or dressing clinic or through the Medical Day Unit. The surgical CNC may also provide advice. Subspecialty referral will be made by the general surgical team where appropriate (e.g. to plastic surgery).

Burn Wound Management (Non-Complex)

Consistent with recommendations of the NSW SBIS, management for burn blisters is 'de-roofing' (removal of skin and fluid), after adequate analgesia. Tense blisters greater than 5mm on finger and toe pulps and pads may be incised and drained without full de-roofing. Blisters of 5mm or less may remain intact. ^[4, 6, 7]

Debridement of non-viable skin enables visualisation and assessment of the wound base and allows the direct application of a dressing to the base of the wound. Whenever feasible, blister drainage and de-roofing of non-complex burns should be attended at the initial presentation: the ED has the resources to safely support the use of narcotic analgesia and sedation adjuncts. Definitive burn dressing application in ED also enables application of a suitable occlusive dressing that can remain in situ until clinic review.

The ED stocks a limited range of silver impregnated and silicon based dressing products that are indicated for dressings for up to 7 days wear time. Dressing choice may be influenced by the age of the child, time until planned follow up, the area to be dressed and the depth of burn. (Refer to Sections 6 and 7 in [Burns Management guideline](#)). Coban™ tape must not be used as a retention dressing under any circumstances due to the risk of secondary ischaemic compression injury.

Parents should be supplied with a written 'Burn and Dressing Care' information sheet and home management discussed. Some degree of discomfort can be anticipated at the subsequent outpatient dressing change. Parents should therefore be advised to administer oral analgesia prior to clinic attendance and to fast their child for 2 hours prior to their clinic appointment in the event that nitrous oxide sedation is required.

Discharge

All parents and carers must be advised to return the child to ED for review at any time if there are concerns such as pain, fever, discharge/odour or a contaminated or dislodged dressing. Clinicians should avoid prediction of healing time and assurances that scarring will not occur during the Emergency presentation. Burns are dynamic and healing is variable among individuals. Longer term issues of concern regarding scar management will be addressed by the burn physiotherapist in consultation with the General Surgeon in the post-acute phase of healing.

Related Documents

- [Burns Management](#)
- [Emergency Burn Care: admission and patient transfer to CHW](#)
- [Trauma Call Criteria – ED SCH](#)
- [Burn Patient Emergency Assessment and Management Chart](#)
- [Burns: Retrieval of Children with Greater than 10 percent Burn Injuries NETS](#)

Parent Information Sheet

- [Burn and Dressing Care Information Sheet](#)

References

1. Australian & New Zealand Burn Association. 2016-18, Emergency Management of Severe Burns (EMSB), Course Manual (18th Ed.).
2. Advanced Life Support Group. 2017 (Australian Edition) Advanced Paediatric Life Support (APLS), Course Manual (6th Ed)
3. Herndon, D. 2012, Total Burn Care, 4th Edition, Elsevier
4. Statewide Burn Injury Service. (2017) NSW Burns transfer guidelines
https://www.aci.health.nsw.gov.au/_data/assets/pdf_file/0004/162634/ACI_PRISM_Burns-Transfer_Guidelines.pdf
5. Wounds International, 2017. International Best Practice Guidelines: Effective skin and wound management of noncomplex burns.
6. Statewide Burn Injury Service. (2019) Clinical Guidelines: Burn Patient Management (4th ed):
https://aci.health.nsw.gov.au/_data/assets/pdf_file/0009/250020/Burn-patient-managementguidelines.pdf
7. ACI Minor Burn Blister Management
https://www.aci.health.nsw.gov.au/_data/assets/pdf_file/0004/324472/Minor-burn-blistermanagement.pdf

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