

ACI Statewide Burn Injury Service

<http://www.aci.health.nsw.gov.au/networks/burn-injury>

ACI Statewide Burn Injury Service



AGENCY FOR
CLINICAL
INNOVATION

Statewide Burn Service

Three tertiary referral burn units

Adults

- Concord Repatriation General Hospital 10 beds + ICU
- Royal North Shore Hospital 9 beds + ICU

Paediatrics

- The Children's Hospital at Westmead 8 beds

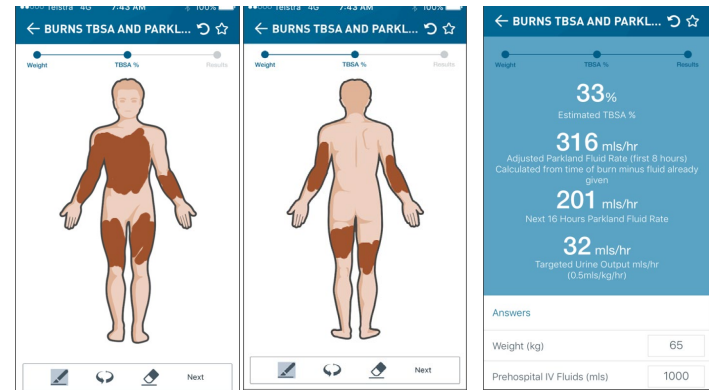
Burn Unit activity

Annual Averages

- 3234 burn cases treated at the 3 units
- 922 acute admissions
- 3120 treated in Burn Ambulatory Care
- 10,228 OOS in Ambulatory Care
- 73 per year >20%TBSA

ACI Statewide Burn Injury Service

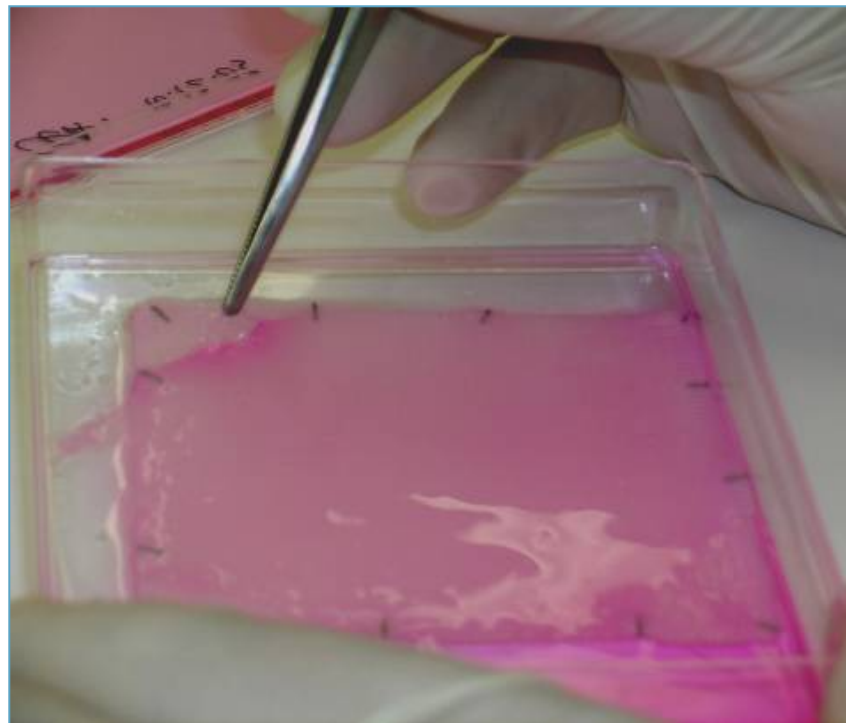
- Guidelines and Model of Care
- Burn education to clinicians
- Development of online Burn Hub Beyond Burns - survivors + clinicians
- Data registry both NSW and Aus & NZ+ Quality Improvement Program
- Prevention and first aid programs
- Research collaboratives
- Partnerships
- Clinical Practice Review
- Disaster preparedness & Response
- Trauma App



Resources online

- Transfer Guidelines
- Allied Health
 - Physio/Occ Therapy
 - Speech Path
 - Nutrition
 - Play therapy
 - Social Work
- Burn Management
- Minor Burn Management
- Escharotomy

Skin Laboratory



Clinical Practice Review Committee

Reviews:

- Submissions from clinicians across NSW Burn Units
- All deaths
- Clinical issues leading to adverse outcomes
- Clinical trends
- Transfers to the Service

Transfer Feedback Form

The ACI Statewide Burn Injury Service endeavours to continually improve the clinical care and service to our burn patients and to optimise patient health outcomes.

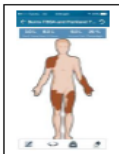
The patient transfer process has been identified as a focus for improvement activities. To this end, the NSW Statewide Burn Injury Service Clinical Practice Committee has developed a two-way feedback form in order to provide feedback to the referring hospital/facility following a patient transfer to one of our constituent burn units i.e. Royal North Shore Hospital, Concord Repatriation General Hospital and the Children's Hospital at Westmead.

The NSW Statewide Burn Injury Service Burn Transfer Guidelines 4th Edition; can be accessed at www.aci.health.nsw.gov.au/resources/burn-injury

The Patient Emergency Assessment and Management Chart should be used when assessing, managing and transferring a patient to the burn units and can be found also at the above link as an appendix to the Transfer Guidelines and now available as a State Form NH700241.

The **NSW Trauma App** is now available for both android and iOS platforms.

This app includes interactive Burn assessment calculators for paediatrics and adults as well as Guidelines, checklists and useful links to burn specific resources.



Each patient transfer will have a form, based on the transfer guidelines, returned to the referring hospital /facility in a timely manner.

Please discuss this feedback with all relevant staff from your facility.

Please give us your feedback on this form about the transfer process for this patient from your perspective. Could we improve the process? Could communication be improved? Could your hospital/ facility benefit from further education regarding the transfer process or other burns related issues?

Fax no: 9463 2006 or email anne.darton@health.nsw.gov.au

Email Consult is available at the three burn units and digital photos can be attached to the email. CHW: kidsburns@chw.edu.au RNSH: NSLHD-BurnsConsult@health.nsw.gov.au CRGH: slhd-concordburnsunit@health.nsw.gov.au

The NSW Statewide Burn Injury Service can arrange for staff education. We can be contacted at the Severe Burns Unit, Level 6 Clinical Services Building, Royal North Shore Hospital Reserve Rd St Leonards NSW 2065 Tel: 02 9463 2105 or email the Network Manager Anne Darton anne.darton@health.nsw.gov.au. Web address: www.aci.health.nsw.gov.au the website now has burn care presentations on the 'Education' and 'Resources' tabs

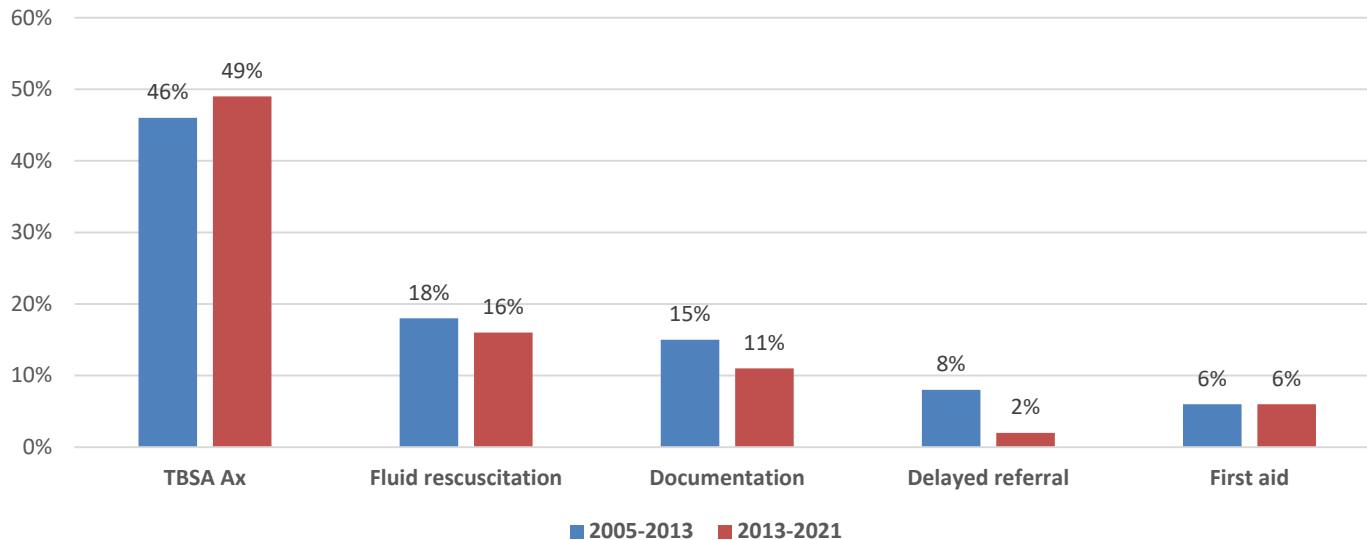
Print Name & Designation:

Signature:

Date of Transfer:		Date form completed:	
Patient Name:		Referring hospital/ healthcare facility:	
MRN:		Referring Doctor:	
Assessment:		Referring Hospital	Burn Unit
<ul style="list-style-type: none"> Percentage TBSA Other injuries 			Comments:
Referral Criteria met			
<ul style="list-style-type: none"> Contacts made as per guidelines? Mode of transfer appropriate? 		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Stabilisation			
<ul style="list-style-type: none"> First aid/ cooling the burn Prevention of hypothermia Respiratory care Circulatory care Gastrointestinal care Pain management Wound management Tetanus prophylaxis 		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Fluid resuscitation			
<ul style="list-style-type: none"> Modified Parkland formula Appropriate solution used Paediatric; maintenance fluids 		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Documentation			
<ul style="list-style-type: none"> Burn Patient Emergency Assessment & Management Chart from T/F Guidelines used. 		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
Completed by:		Director :	
General Comments/ Recommendations/Clinical Update:			

Top issues with transfers

Top 5 issues as a % for those with issues



- **Other issues included:** temp control, circ care, analgesia, dressing choice, tetanus prophylaxis, resp care, escharotomy, transfer mode

Epidermal burn (erythema)

- damage to epidermis only; skin intact, no blisters present
- erythema; red
- brisk capillary refill
- heals spontaneously within 3–7 days with moisturiser or protective dressing.

**Superficial dermal burn**

- damage to upper layer of dermis
- pink; blisters present or absent
- brisk capillary refill (under blister)
- should heal within 7–10 days with minimal dressing requirements.

**Mid dermal burn**

- damage into mid dermis
- dark pink
- sluggish capillary refill
- should heal within 14 days
- deeper areas may need surgical intervention and referral.

**Deep dermal burn**

- burn extends into deeper layers of dermis, but not through entire dermis
- blotchy red/white
- sluggish to absent capillary refill
- generally needs surgical intervention
- refer to specialist unit.

**Full thickness burn**

- destruction of entire dermis; sometimes underlying tissue involved
- white, waxy, cherry red, brown, black
- no capillary refill
- surgical intervention and long-term scar management required
- refer to specialist unit.



Prevention

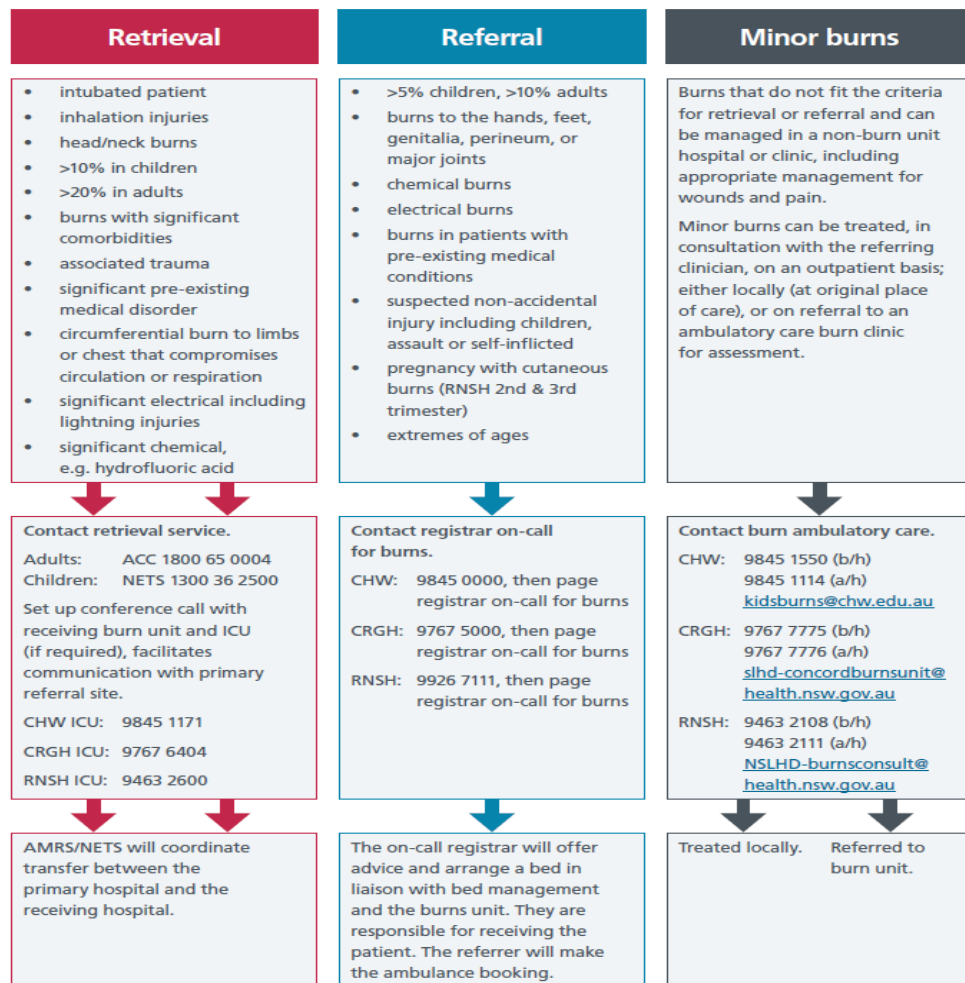
- Data drives activities
- School programs
- Media campaigns
- Prevention + first aid info on website
- Promotional stalls
- Dept of Fair Trading & ACCC
- Partnerships

Rehabilitation

- Links with Graythwaite Rehabilitation Centre and other rehab facilities
- 2 day Burn Rehabilitation Course run each year

Transfer Guidelines





Referral Criteria: Medical Retrieval

- Any intubated patient
- Inhalation injuries with cutaneous burns
- Head and neck burns
- Dermal or full thickness burns >10% in children
- Dermal or full thickness burns >20% in adults
- Burns with significant co-morbidities
- Associated trauma
- Circumferential burn to limb or chest that compromises circulation or respiration
- Electrical conduction injury with cutaneous burns
- Chemical injury with cutaneous burns

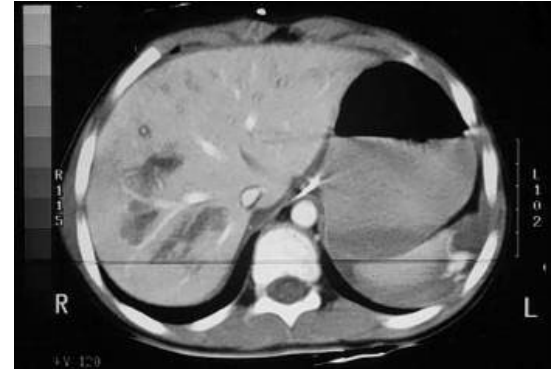
Criteria for Retrieval - Intubated



Criteria for Retrieval – Head, face, neck



Criteria for Retrieval – Co-morbidities



Referral criteria: Transfer

- Dermal or full thickness burns in adults >10% TBSA
- Dermal or full thickness burns in children >5% TBSA
- Burns to the face, hands, feet, genitalia, perineum, and major joints
- Chemical burns
- Electrical burns including lightning injuries
- Burns with concomitant trauma
- Burns with associated inhalation injury
- Circumferential burns of the limbs or chest
- Burns with pre-existing medical conditions that could adversely affect care and outcome
- Suspected non-accidental injury including children, assault or self inflicted
- Pregnancy with cutaneous burns
- Burns at the extremes of age – infants and frail elderly

Referral criteria - specialised areas



Hands, feet, genitalia, perineum, joints

Process

Medical Retrieval

- AMRS /NETS set up conference call with receiving ICU & Burn Unit, facilitates communications with primary referral site & coordinate transfer

Transfer referral

- Burns Registrar/fellow or Surgical Registrar (CHW) on call (first registrar contacted is responsible to find a bed at the other burns unit if unavailable at theirs)

	FAMILY NAME	MRN
	GIVEN NAME	<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE
Facility:	D.O.B: ____/____/____	M.O.
	ADDRESS	
BURN PATIENT EMERGENCY ASSESSMENT & MANAGEMENT CHART	LOCATION / WARD	COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE
HISTORY OF INJURY		
How did the burn happen? (see page 1)		
Who saw it / who else was there?		
What was done?		
MEDICAL HISTORY		
Past Medical History _____		
Co-morbidities? _____		
Allergies? <input type="checkbox"/> No <input type="checkbox"/> Yes		
If YES specify? _____		
Medications? <input type="checkbox"/> No <input type="checkbox"/> Yes		
If YES specify? _____		
Last oral intake? _____		
Social History _____		
SOCIAL ISSUES		
Any features of concern? E.g. non-accidental injury/self-harm/abuse? <input type="checkbox"/> No <input type="checkbox"/> Yes		
If YES specify? _____		
Child Protection Service notified? <input type="checkbox"/> No <input type="checkbox"/> Yes Reference Number _____		
Action taken _____		
Signature: _____ Date: ____/____/____ Time: ____:____		
Print name: _____ Designation: _____		
CONTACT NUMBERS		
Retrieval (refer to Transfer Guidelines for Retrieval Criteria)	Transfer and consultations (Burns Registrar via Hospital Switch)	Minor Burn Management Burn Ambulatory Clinics
AMRS (adult retrieval) 1800 650 004 NETS (paediatric retrieval) 1300 362 500	RNSH 02 9628 7111 (adult) CRGH 02 9767 5000 (adult) CHW 02 9645 0000 (paediatric)	RNSH 02 9483 2108 CRGH 02 9767 7775 CHW 02 9645 1850
Digital Image Referral		
NB Digital images can be emailed to Burn Units only after consent and contact have been made		
RNSH – NSLHD-BurnsConsult@health.nsw.gov.au		
CRGH – CRGH.BurnsUnit@sswahs.nsw.gov.au		
CHW – kidsburns@chw.edu.au		
RNSH: NSLHD, CCLHD, HNELHD, NNSWLHD & MINLHD	CRGH: ISLHD, NBMLHD, SESLHD, SWSLHD, SLHD, WSLHD, FWLHD, MLHD, SNSWLHD, WNSWLHD & ACT.	CHW: all children <16 yrs in NSW & ACT.




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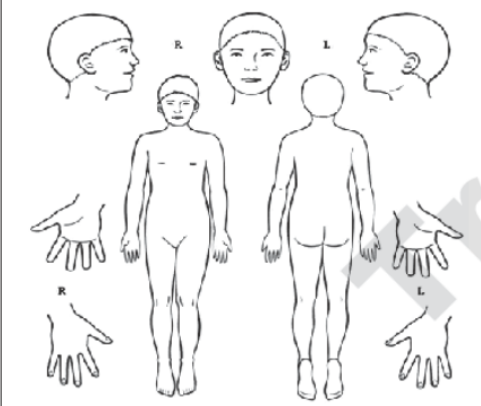
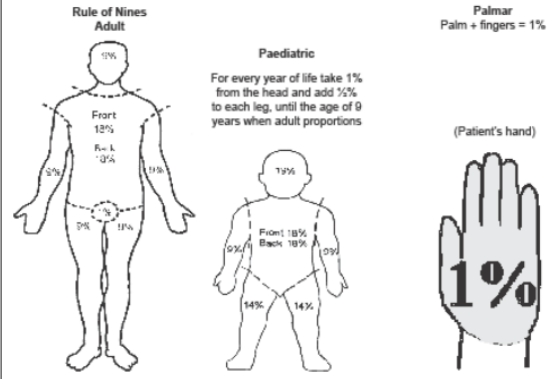
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	FAMILY NAME	MRN
	GIVEN NAME	<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE
Facility:	D.O.B: ____/____/____	M.O.
	ADDRESS	
BURN PATIENT EMERGENCY ASSESSMENT & MANAGEMENT CHART	LOCATION / WARD	COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE
Presentation Date: ____/____/____	Time: ____:____	Trauma Call: <input type="checkbox"/> YES <input type="checkbox"/> NO
Burn Date: ____/____/____	Burn Time: ____:____	Triage Category: _____
Weight (Kg): _____	Doctor: _____	
Burn Mechanism: _____		
First Aid given: <input type="checkbox"/> NO <input type="checkbox"/> YES Specify _____		
Airway Intubation required? <input type="checkbox"/> Yes <input type="checkbox"/> No	Breathing – O2 RR _____ Air Entry _____	
Size of tube _____ mm	O2 saturation _____	
Cervical Spine <input type="checkbox"/> Normal <input type="checkbox"/> At Risk <input type="checkbox"/> Immobilised	Burn circumferential around chest / neck? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Circulation – HR _____ BP _____/_____/_____ 2 x IV lines Size and location _____		
Circumferential burns? Yes/No specify _____		
Capillary refill centrally <input type="checkbox"/> 1-2 seconds <input type="checkbox"/> > 2 seconds <input type="checkbox"/> Absent	Capillary refill peripherally <input type="checkbox"/> 1-2 seconds <input type="checkbox"/> > 2 seconds <input type="checkbox"/> Absent	
Disability Level of consciousness (AVPU): _____ AVPU = A – Alert, V – Response to Vocal stimuli, P – Responds to Painful stimuli, U – Unresponsive	Environment Patient Temp. _____°C Temp route _____ Temp date ____/____/____ time ____:____ Remove clothing and jewellery Keep unburnt areas warm Warm IV fluids <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> N/A Warm blankets <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> N/A	
Pupils: (L) _____ mm (R) _____ mm		
Assess % Total Body Surface Area (TBSA) burnt using Rule of Nines (see page 2)		
TBSA body chart completed? <input type="checkbox"/> No <input type="checkbox"/> Yes By whom? _____ (Designation) _____		
Fluid Resuscitation (see page 3 for specific fluid calculations)		
<input type="checkbox"/> Not required Large bore IVCs (2 for >20%, 1 for >10%) or CVL inserted? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Bloods taken: <input type="checkbox"/> FBC <input type="checkbox"/> EUC <input type="checkbox"/> BSL <input type="checkbox"/> Coags <input type="checkbox"/> COHb <input type="checkbox"/> Drug screen		
IDC inserted? (if > 10% TBSA or perineum) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Nasogastric tube inserted? (if > 10% children; >20% adult) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Co-existing injuries? <input type="checkbox"/> Yes <input type="checkbox"/> Possible (e.g. blast / electrical injury) <input type="checkbox"/> No		
Specify _____		
Pain Management Morphine (alternative if allergic) Adults Stat IV 2mg, repeat every 5mins as required Max. 0.2mg/ Kg Children Stat IV 0.1mg/ Kg, repeat every 15mins as required Max. 0.3mg/ Kg	Immunisation Immunisations up to date? <input type="checkbox"/> No <input type="checkbox"/> Yes Specify _____ Tetanus status: <input type="checkbox"/> Primary course given <input type="checkbox"/> Last dose of booster _____ <input type="checkbox"/> Give Immunoglobulin if < 3 doses <input type="checkbox"/> Give booster if last booster > 5yrs ago	
Minor burn Oral analgesia (e.g. paracetamol +/- codeine / oxycodone, etc.) may be adequate		

FAMILY NAME		MRN
GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE
D.O.B. / /	M.O.	
ADDRESS		
LOCATION / WARD		
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE		

BURN PATIENT EMERGENCY ASSESSMENT & MANAGEMENT CHART

BURN DISTRIBUTION (shade affected areas on diagram below)



Images reproduced with permission from: Australian & New Zealand Burn Association, *Emergency Management of Severe Burns Course Manual* 18th Ed. 2016.

FAMILY NAME		MRN
GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE
D.O.B. / /	M.O.	
ADDRESS		
LOCATION / WARD		
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE		

BURN PATIENT EMERGENCY ASSESSMENT & MANAGEMENT CHART

RESUSCITATION FLUIDS (if > 10% TBSA for children, >20% for adults)

Weight _____ Kg

Modified Parkland Formula = 3 mLs x weight (Kg) x % TBSA burn
to be given as Hartmann's solution in 24 hrs following the injury (see Transfer Guidelines)

3 mLs x _____ Kg x _____ % TBSA = total fluids for 1st 24 hrs

* NB This is a guide only - Titrate fluids to urine output*

Total resuscitation fluids in 24 hrs	_____ mLs	Start time _____ Finish time _____
50% Replacement in 1st 8 hrs following injury	_____ mLs	
Total Fluid given prior to admission	_____ mLs	
Subtract Fluid already given = fluid to be given to complete 1st 8hrs	_____ mLs	
Hourly rate for replacement (within 1st 8 hrs)	_____ mLs/hr	Start time _____ Finish time _____
Remaining 50% of Replacement in next 16 hrs	_____ mLs	
Hourly rate for replacement (in subsequent 16 hrs)	_____ mLs/hr	Start time _____ Finish time _____
Maintenance fluids (for children < 30 Kg only)	_____ mLs/hr	

MAINTENANCE FLUIDS (Not applicable for adults)

Children require maintenance fluids (0.8% sodium chloride and 5% Glucose) in addition to resuscitation fluids

4 mL/kg/hr	For first 10 kg weight
2 mL/kg/hr	For next 10 kg weight
1 mL/kg/hr	For any additional kg weight

URINE OUTPUT

• Children 1 mL/Kg/hr	• Adults 0.5 mL/Kg/hr
• 2 mL/Kg/hr required for pigmented urine such as myoglobinuria / haemoglobinuria	

REFERRAL CRITERIA
Refer to Transfer Guidelines ("Referral" meaning contact with not necessarily transfer to Burn Unit)

- Mid-dermal, deep dermal or full thickness burns in children >5% TBSA, in adults >10% TBSA.
- Any priority areas are involved, i.e. face/neck, hands, feet, perineum, genitalia and major joints.
- Caused by chemical or electricity, including lightning.
- Any circumferential burn.
- Burns with concomitant trauma or pre-existing medical condition.
- Burns with associated inhalation injury.
- Suspected non-accidental injury.
- Pregnancy with cutaneous burns

DRESSING

For transfer to specialist unit within 8 hrs apply cling film to burnt areas (Vaseline gauze/white paraffin for face). Do not wrap circumferentially.
For delayed transfer > 8 hrs apply antimicrobial dressing such as silver dressing or Vaseline gauze, after discussion with burn unit.

For burns not requiring transfer to specialist unit

- Give pre-med analgesia 30mins prior to procedure (e.g. paracetamol +/- codeine / oxycodone, etc.)
- Clean wound with chlorhexidine 0.1%, saline or clean water
- Apply appropriate dressing such as silver dressing or Vaseline gauze (see Minor Burn Management)
- Make follow-up appointment and advise on care and analgesia for home usage and pre-dressing

NSW Fire & Rescue Services
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NSW Fire & Rescue Services
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BURN PATIENT EMERGENCY ASSESSMENT & MANAGEMENT CHART

SMR060.815

Digital photo Referral or Advice

- Children's Hospital at Westmead

kidsburns@health.nsw.gov.au

9845 1114

- Royal North Shore Hospital

BurnsRNS@health.nsw.gov.au

9463 2111

- Concord Repatriation General Hospital

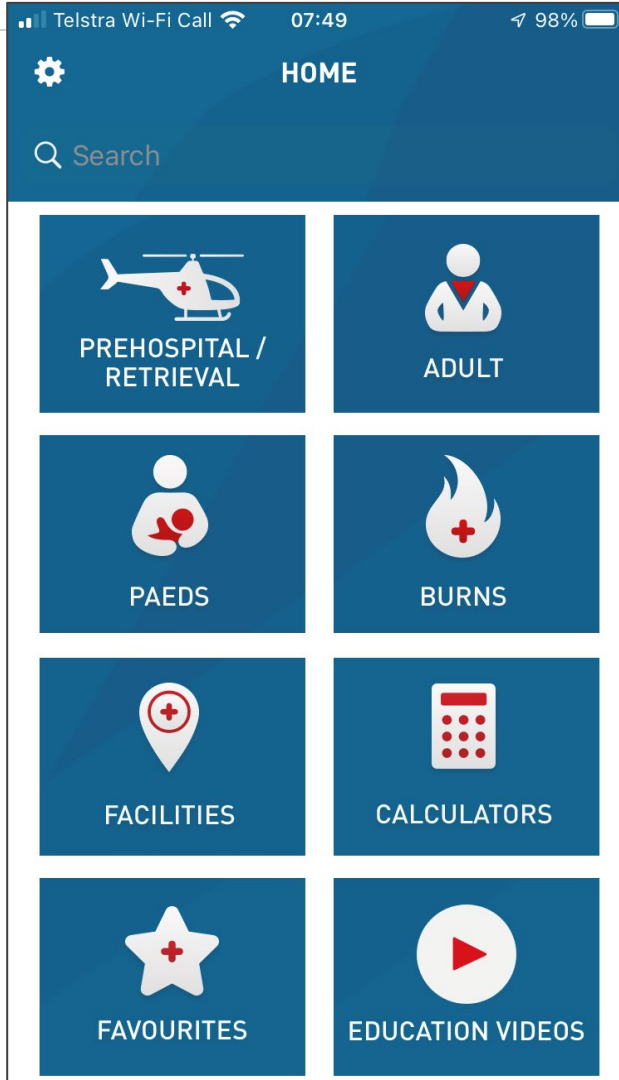
Slhd-concordburnsunit@health.nsw.gov.au

9767 7776

Trauma App

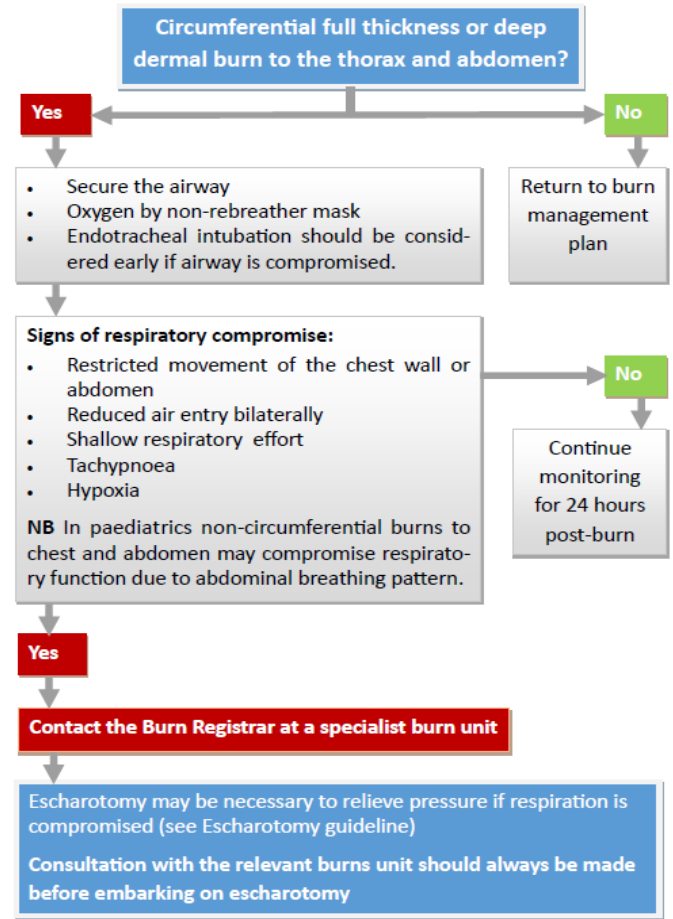


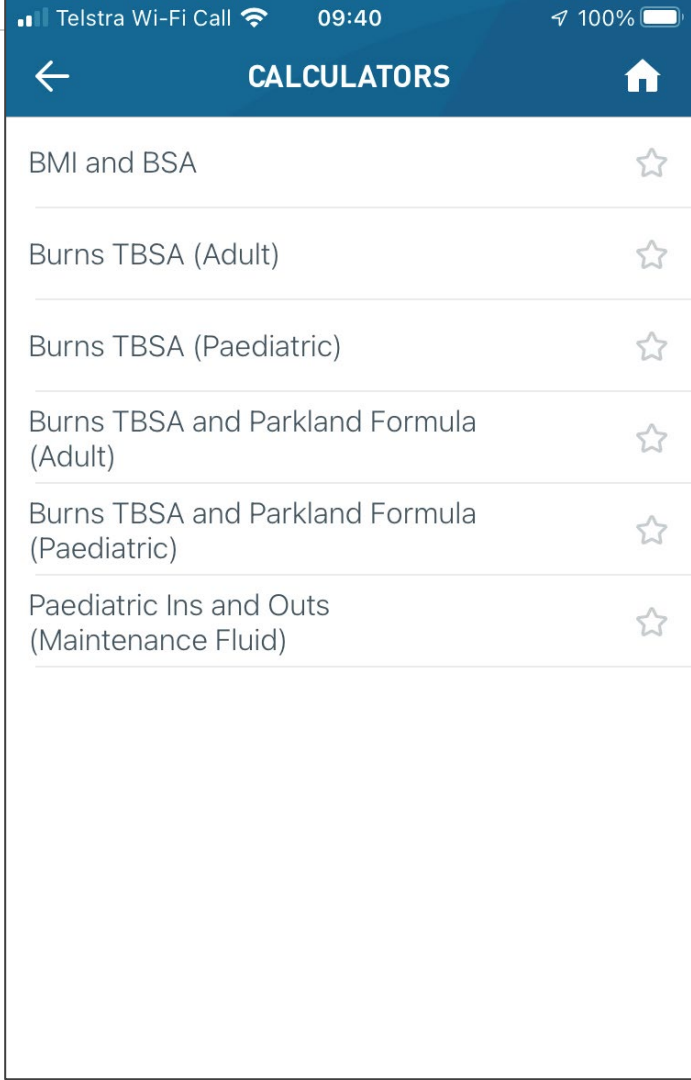
NSW TRAUMA ITIM



BURNS

- Algorithms >
- Calculators >
- Checklist >
- Contact Details >
- Facilities >
- Guidelines >
- New Zealand specific content >
- Resources >





← BURNS TBSA AND PARKL... ↻ ☆

● ——— ● ——— ●
Weight TBSA % Results

Weight

Weight (kg)

65

Prehospital IV Fluids (mls)

1000

Time since burn

1hr

Next >

← BURNS TBSA AND PARKL... ↻ ☆

Confirm Weight (kg)

If less than 16 years use the Paediatric
Burn Calculator.

65

Cancel

Confirm

Time since burn

1hr

Next >

1

2

ABC

3

DEF

4

GHI

5

JKL

6

MNO

7

PQRS

8

TUV

9

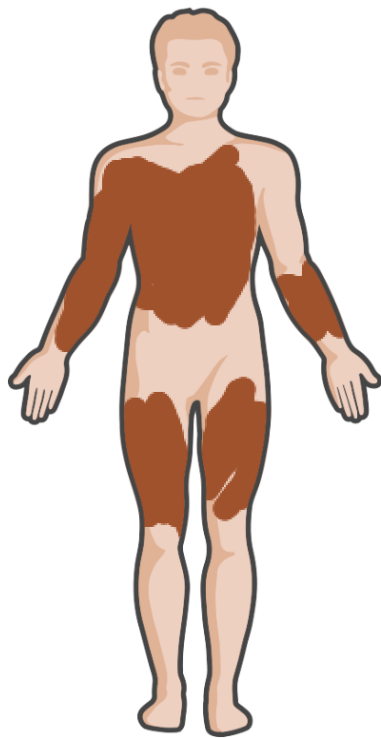
WXYZ

0

✕

← BURNS TBSA AND PARKL... ↻ ☆

● Weight ● TBSA % ● Results



✎ ↻ 📄 Next

← BURNS TBSA AND PARKL... ↻ ☆

● Weight ● TBSA % ● Results



✎ ↻ 📄 Next

Telstra 4G 7:44 AM 100%

BURNS TBSA AND PARKL...

← ↻ ☆

Weight TBSA % Results

33%
Estimated TBSA %

316 mls/hr
Adjusted Parkland Fluid Rate (first 8 hours)
Calculated from time of burn minus fluid already given

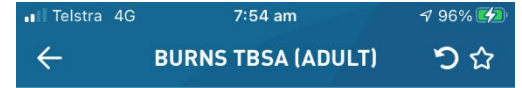
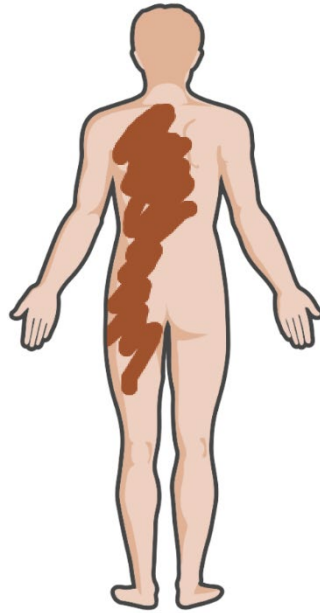
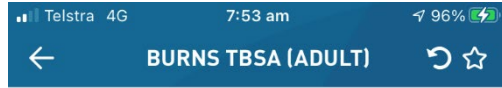
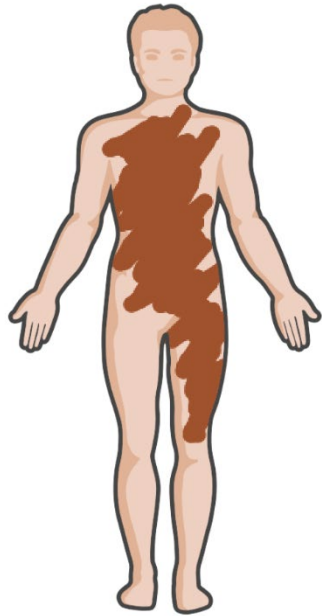
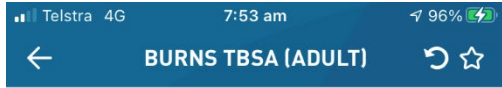
201 mls/hr
Next 16 Hours Parkland Fluid Rate

32 mls/hr
Targeted Urine Output mls/hr
(0.5mls/kg/hr)

Answers

Weight (kg)	65
Prehospital IV Fluids (mls)	1000

Or just %TBSA – no fluid



30.0%
Estimated TBSA %

← BURNS TBSA AND PARKL... ↻ ☆

● ——— ● ——— ●
Age/Weight TBSA % Results

Age/Weight

Age (years)

Weight (kg)

Prehospital IV Fluids (mls)

Time since burn

Next



← BURNS TBSA AND PARKL... ↻ ☆

Confirm Weight (kg) and Age (years)

If 16 years or over use the Adult Burn Calculator.

Cancel

Confirm

Time since burn

1

2

ABC

3

DEF

4

GHI

5

JKL

6

MNO

7

PQRS

8

TUV

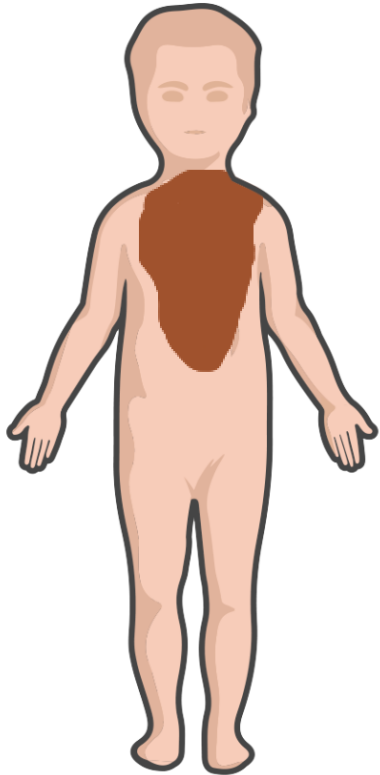
9

WXYZ

0



Weight TBSA % Results



Age/Weight TBSA % Results

8%

Estimated TBSA %

0 mls/hr

Fluid resuscitation not required with < 10% estimated TBSA burns

0 mls/hr

Next 16 Hours Parkland Fluid Rate

18 mls/hr

Urine Output mls/hr
(1 mls/kg/hr)

56 mls/hr

Maintenance Fluid mls/hr
(1 mls/kg/hr)

Answers

Age (years)

2

Weight (kg)

18



Next

ACI Statewide Burn Injury Service

<http://www.aci.health.nsw.gov.au/networks/burn-injury>



AGENCY FOR
**CLINICAL
INNOVATION**

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Next Review 2027. SHPN (ACI) 220106 ISBN 978-1-76023-094-4 TRIM: ACI/D22/2558

