Midland Burn
Operational Delivery Network

Midlands Trauma Networks
Midland Burns Operational Delivery Network

Document name:

MBODN REFERRAL GUIDELINES
GUIDELINES FOR THE ADMISSION AND TRANSFER OF BURNS PATIENTS IN THE MIDLANDS

Document purpose:
This document contains the main principles required to promote the safe admission and transfer of burn injured patients to the correct burns service within the Midlands.

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Target audience:
Midland Burns Referring Services, Midlands Emergency Departments East and West Midlands Minor Injury Departments, Major Trauma Centres, Trauma Units, Local Emergency Hospitals, East and West Midlands Ambulance Services

Additional circulation list:
East and West Midlands referring services
University Hospitals of Birmingham NHS Foundation Trust
Birmingham Women's and Children's Hospital NHS Foundation Trust
Nottingham University Hospitals NHS Trust
University Hospitals of Leicester NHS Trust
East and West Midlands Ambulance service
West Midlands Major Trauma and Critical Care Network
East Midlands Major Trauma and Critical Care Network

Superseded document(s):
Midland Burn OCN Referral Guidelines

Action required:
Dissemination to MTC, TU, LEH personnel and dissemination to Ambulance Provider Representatives for information

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Document status:
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Purpose of the document
To outline the principles required for the safe admission and transfer of burn injured patients to burns services based within the Midlands. Specifically set out as guide for all referring services based in the Midlands.

Scope of document
Limited to giving guidance to the burns referring services based in the East and West Midlands. It promotes the safe admission and transfer of burn injured patients to the correct service level of burn care required for specific burn injuries.

Introduction
The immediate and accurate care of the burn injury by referring services is crucial to patient outcomes from the time of admission until transfer to a specialized burns service. This document provides a guided approach to the safe and correct admission and transfer pathway of all burn injuries attending referring services in the Midlands. This document highlights the differing thresholds that determine the correct service level of burns care differing Burn injuries requires.

These guidelines have been reproduced in consultation with the MBODN and the burns clinicians within this network and agreed accordingly.

Standard
This document supports and adheres to the following Burns Care Standards:
B26, B27, B28, B30, B31, C01, C05, C07, C08, D05, D08, E04, E09, G05,
National Standards for Provision and Outcomes in Adult and Paediatric Burn Care
(British Burns Association 2018)

Recommendations

1) The expectation is for staff working in Emergency Departments to familiarize themselves with this document and additional adjunct guidelines which can be found on the Midland Burn Operational Delivery Network website https://www.mcctn.org.uk/burns.html

2) Where it is possible, staff should receive teaching / educational sessions to support information documented in MBODN guidelines

References

1) https://www.mcctn.org.uk/burns.html
2) National Standards for the Provision and Outcomes in Adult and Pediatric Burn Care. (BBA 2018)
3) Emergency Management of Severe Burns.2019 17th edition.

Version control and record of amendments

Date	Amendment	Lead

Introduction

This document describes the thresholds for the referral of children and adults with burn injuries in the Midlands. The first point of contact for advice regarding the admission, transfer or treatment of a patient with a burn injury should be the local burn service. There are a number of factors that will influence the need for a patient to be referred to a specialised burn service. These include the size (TBSA - total body surface area), type and severity of the burn, the age of the patient, presence of an inhalation injury and any significant co-morbidity. All burn services in the Midlands will manage burns patients at the lower end of the referral threshold (minor burns / facility level care). Patients with more complex or severe injuries will be referred to a burn unit or a burn centre (unit / centre level care). The local burn service will assist any referrer in ensuring that patients from the Midlands are admitted to the right service. Alignment with major trauma referral pathways is facilitated by having the burn unit and centre level services (Nottingham and Birmingham) co-located with major trauma centres. The burn services in the Midlands and the level of care they provide are shown in Table 1.
The referral pathway guidance in this document must be used for burn Injured patients, not the Major Trauma referral pathway.

The primary purpose of the guidelines is to ensure that those responsible for managing burn patients in either primary or secondary health care are aware of when to refer patients to a specialised burn service, following the referral guideline in this document.

Burn care is organised using a tiered model of care (centre, unit and facility).
The most severely injured are cared for in services recognised as centres and those requiring less intensive clinical support are cared for in services designated as either burns units or facilities. Adherence to these guidelines makes optimum use of the resources available in the Midlands.
A burn centre will also provide unit and facility level of care to the local population.
Referral of patients with burn injuries to Specialist Burn Care Services.

These guidelines also describe the agreed thresholds at which patients should be cared for in the three tiers of burn care provided in the Midlands. The burn services are listed in Table 1 below.

This document has been produced in consultation with burn clinicians working in the burn services in the Midlands. Any deviation from the nationally agreed thresholds has been identified. The commissioners of specialised burn care and the service leads for each of the burn providers in the Midlands have approved these referral guidelines (see Page 1).

Table 1 Burn Services in the Midlands (Description of Capability)

Hospital	Level of Service	Description of patients treated and cared for in service
University Hospitals Birmingham NHS Foundation Trust	Burns Centre	Adults with minor, moderate, severe and complex severe burns
Birmingham Women's and Children's Hospital NHS Foundation Trust	Burns Centre	Children with minor, moderate, severe and complex severe burns
Nottingham University Hospitals NHS Trust	Burns Unit	City Hospital campus: Adults with minor, moderate and severe burns Queens Medical Centre: Children with minor and moderate burns

University Hospitals of Leicester NHS Trust	Burns Facility	Adults and Children with minor burns
University Hospitals of North Midlands NHS Trust	Burns Facility	Adults and Children with minor burns

Referral of patients with burn injuries to Specialist Burn Care services

The first point of contact for advice regarding burn admissions, transfers or treatments of a patient with a burn injury should be the local burn service. A number of factors will influence the need for a patient to be referred to a specialised burn service. These include the size (TBSA - total body surface area), type and severity of the burn, the age of the patient, presence of an inhalation injury and any significant co-morbidity. All burn services in the Midlands will manage burns patients at the lower end of the referral threshold (minor burns / facility level care).
Patients with more complex or severe injuries will be referred to a burn unit or a burn centre (unit / centre level care). The local burn service will assist any referrer in ensuring that patients from the Midlands are admitted to the right service. Alignment with major trauma referral pathways is facilitated by having the burn unit and centre level services (Nottingham and Birmingham) co-located with major trauma centres. The burn services in the Midlands and the level of care they provide are shown in Table 1.
The referral pathway guidance in this document must be used for burn Injured patients, not the Major Trauma referral pathway.

A number of factors influence the need for a patient to be referred to a specialised burn service
These are …

- TBSA - total body surface area
- Type
- Severity
- Age
- Presence of an inhalation injury
- Significant co-morbidity.

We work on a tiered system = Ensures that appropriate care is given to the correct burn injury. This is supported by clinicians in the burns service and the commissioners of specialised burns care.

The burn services in the Midlands and the level of care they provide are shown below

Area	**Level of Service**	**Patients treated.**
University Hospitals Birmingham NHS Foundation Trust	Centre	Adults -minor /moderate severe /complex
Birmingham Women's and Children's Hospital NHS Foundation Trust	Centre	Children -minor / moderate severe /complex
Nottingham University Hospitals NHS Trust (City and QMC)	Unit	Adults - minor/ moderate/ severe Paediatric - Minor/moderate
University Hospitals of Leicester	Facility	Adult and children with minor burns

University Hospitals of North Midlands NHS Trust	Facility	Adult and children with minor burns

Initial indication for referral to a specialised burns service

A child with a partial thickness burn greater than 2% TBSA

An adult with a partial thickness burn greater than 3% TBSA [1]

In addition to the minimal thresholds for both adults and paediatrics the criteria identified below should also be considered for referral

- Inhalation injury is defined as visual evidence of suspected upper airway smoke inhalation, laryngoscopic and /or bronchoscopic evidence of tracheal or more distal contamination / injury or suspicion of inhalation of non-soluble toxic gases
- Full thickness burn larger than 1% TBSA
- Special areas (hands, face, neck, feet, genital / perineum)
- Areas involving a joint / affecting mobility and function
- Electrical burns / chemical burns
- Safeguarding concerns
- A burn with suspicion of non-accidental injury should be referred to a specialised burn service for an expert assessment within 24 hours
- A burn associated with major trauma
- A burn associated with significant co-morbidities
- Circumferential burns
- Burn not healed in 2 weeks
- Any cold injury
- Unwell / febrile child

[1] National Burn Care Referral Guidance (2012)

NON-SURVIVABLE INJURIES

End of life care as a result of a burn injury, is made after assessment by two consultants in the emergency department one of which must be a burns surgeon. The two consultants must be in agreement.
Decisions must include patient, carers and family.
Clinical factors to be considered are as follows;

- TBSA
- Depth of burns
- Age of patients
- Any co-morbidity
- Age and % burn are used as an indication to the likelihood to survival. (Revised BAUX score)
- Consideration of the location of where care to be given
- Most appropriate level of service
- Maybe that a local hospital or burns service is deemed appropriate
- Contact local burns service for any advice
- Nursing care in the emergency department should be at the advice of the unit or centre nurse in charge
- If the decision is to care for any patient outside of a unit / centre communication should be made with that care provider twice daily with the consideration of using the burns outreach service
- Consider the psychological support that may be needed by the care provider, the patient and the family
- Consider cultural and religious needs

Consider the two scenarios;

- A catastrophic event where there is no feasible prospect of survival (comfort care is the most realistic option) more likely to happen in the emergency department

- Condition deteriorates and there is no prospect of recovery. Damage is irreversible and more likely to happen on a unit or in a centre

Please refer to the MBODN guidelines for the assessment, care and transfer of potential non – survivable injuries found via the link below.

http://nuhnet/nuh_documents/Guidelines/Cancer%20and%20Associated%20Specialties/Burns%20and%20Plastics/2395.pdf

THRESHOLDS FOR PAEDIATRICS

Facility

A burn facility should not admit a child with a primary diagnosis of burns if they are under 6 months old. Over the age of 6 months children can be seen with a burn of less than 5% unless the majority of the area is assessed as non-blanching or full thickness. Any significant burns should be discussed by the referring doctor who must discuss any *significant* [2] burn injury with the burns consultant on call.

[2] Significant is defined as any injury where the referrer feels that greater MDT expertise is required.

Burns Unit (Can admit both minor and major burns)

Children 6 month – 1 year	1 year with a burn less than 10% With a burn less than 30%
Children over 1 year	FTB of less than 20%
Children admitted to unit	With 20 -30 % TBSA should link in with the consultant at the burns centre
Children with an inhalation injury should be admitted to PICU	Irrespective of burn injury

Paediatrics **Consider referrals that may require Burns Centre transfer** **see below**

Respiratory support / PICU
Burn and trauma cases
Severe chemical
High voltage

All children that meet centre level status should be discussed with both centre and unit
PICU support for their burn injury
Discussion with trauma / burns consultant
Children at the upper range of the threshold should be discussed between clinicians at both the Unit and centre
Neonates should only be admitted where there is on site **NICU** [3]. There should be discussion between the neonates and burns consultant
Neonate = up to 4 weeks after birth if born at term (37 – 42 weeks) or up to 60 weeks post conception if pre-term (before 37 weeks)

[3] BWCH does not have a standalone NICU on- site but they provide fully compliant NICU beds within the on PICU

Burns Centre

Inhalation	Visual evidence	Upper airway smoke inhalation	Laryngoscopy /bronchoscopy indicate contamination. Inhalation of non- soluble toxic gases.
6 months to a year	1%	TBSA	FTB
1 – 10 years	>2%	TBSA	FTB
10 – 16 years	>5%	TBSA	FTB
Any age	Any %	Any	Face hands feet genitalia
Any age	Any %	Any	Circumferential to limb
Any age	Any%	Any	High voltage electrical burns
Any age	Any%	Any	Severe chemical burns
Manage all burns with all severities			
Complex paediatric intensive requirements			

Children of any age
Paediatrics requiring ventilator
Burn and polytrauma

Table 2 Summary of referral criteria for paediatrics

Burn Facility	6 months – 1 Year 1 – 10 Years 10 – 16 Years	< 5 % TBSA < 5 % TBSA < 5 % TBSA	Refer to BU or BC if: > 1%TBSA FTB > 2%TBSA FTB > 5%TBSA FTB
Burn Unit	< 1 Year > 1 Year > 1 year	< 10 % TBSA < 30 % TBSA < 20 % FTB	A child with non-blanching / FTB over 20% TBSA is to be referred to a BC.
Burn Centre	0 -16 Years	All	To manage children and adolescents (0 to 16 years) Neonates are to be discussed with the Burn Consultant and the neonatal service. BC will manage children with all severities of burn injuries including those that require complex paediatric intensive care.

THRESHOLDS FOR ADULTS

Burn Facility

A burn facility will admit adults over 16 years with a burn of less than 10% TBSA

Referral to a burn unit or burn centre will be triggered as follows….

- An inhalation injury defined as visual evidence of suspected upper airway smoke inhalation, laryngoscopic and /or bronchoscopic evidence of tracheal or more distal contamination / injury or suspicion of inhalation of non-soluble toxic gases
- Compromised immunity
- Pregnant and present with complications as a consequence of the burn injury
- A non-blanching burn injury greater than 5% TBSA
- Circumferential burns requiring escharotomies

- Any significant burn to the face, hand, feet or genital area
- A circumferential burn to a limb
- High voltage electrical burns / severe chemical burns
- A concern regarding burn injury and comorbidities including any co-morbidity that may affect treatment or healing of the burn
- Any predicted or actual need for HDU or ITU level care
- Any burn with suspicion of non-accidental injury (NAI) should be referred to a Burn Unit / Centre for expert assessment within 24 hours

Burn Unit

A burn unit will admit adults	Over 16 years with a burn of less than 50% TBSA [4]
Patients with	Circumferential burns requiring escharotomies
Patients with inhalation injuries	An inhalation injury is defined as visual evidence of suspected upper airway smoke inhalation, laryngoscopic and/or bronchoscopic evidence of tracheal or more distal contamination / injury or suspicion of inhalation of non- soluble toxic gases
All patients that are admitted with burns	Over 25% TBSA should be discussed with the consultant burn surgeon on call at the BC
Patients with burns ……..	Over 25% TBSA together with an inhalation injury. Should be discussed with the consultant burn surgeon on call at the BC with regard to referral

[4] This is a MBODN local agreement. The National threshold is 40%.

Considerations for discussion and referral to the burn centre.

Burn injury associated with significant multiple injuries (Major Trauma)	The best location for the treatment of these patients must be decided following discussion between the major trauma service and the consultant burn surgeon in the local burn service
For all patients that meet centre level referral thresholds	There must be a discussion between the consultants on call for burns at the local burns service and the burn centre
Patients with compromised immunity	

Pregnant and present with complications as a consequence of the burn injury	
Severe chemical burns or high voltage electrical burns	
A burn injury and associated significant co-morbidities	

Admitting patients at the upper range of the thresholds requires engagement between clinicians from both the unit and centre. Location for definitive care is taken into consideration as is the clinical needs / resources available and risks associated with additional travel times.

Burn Centre

A burn centre will manage patients over 16 years with all severities of burn injuries including those that require complex intensive care
Any age with a burn of any severity and adults requiring ventilator support
Those that have sustained a burn in conjunction with significant multiple injuries (Major Trauma)
A burn centre will manage patients with the most complex burn injuries including patients with burn injuries greater than 50% TBSA that are full thickness or deep dermal that require surgical excision and grafting
A burn centre will manage patients with the most complex burn injuries including patients with burn injuries greater than 50% TBSA that are full thickness or deep dermal that require surgical excision and grafting
The location for definitive care must take into consideration the clinical needs of the patient, the resources available and the risks associated with additional travel times
Decisions made in respect of where to admit adults with a burn injury and major trauma requires engagement between clinicians from both the trauma and burn services (this includes engagement between burn clinicians in both the unit and centre)

A summary of thresholds for referring adults to the different levels of burn services in the Midlands based on their %TBSA and age is shown in Table 3

Table 3 A summary of the referral criteria for adults with burn Injuries

Burns facility	<10%TBSA	Non-complex burn injuries

Burns unit	>25%TBSA >25%TBSA + Inhalation injury <40% TBSA <50%TBSA	Inform BC Discuss with BC/ Consider referral. Deep dermal or full thickness burns With no inhalation injury
Burns centre	All	All ages and severity of burn injury including those requiring complex intensive care

References

Guideline for the Assessment, Care and Transfer of Adult patients with potentially non-survivable burn injuries in and A and E department. (Oct 2016, V2).

National Burn Care Referral Guidance (NNBC) Version 1, Approved February 2012.