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Concept of operations for the management of mass casualties: burns annex

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Content

Introduction

This document provides an overview of the expected response by the NHS, specifically specialised burns services, to an incident involving a large number of casualties with burns. It should be read in conjunction with:

- Concept of operations (CONOPS) for the management of mass casualties (https://www.england.nhs.uk/publication/concept-of-operations-for-the-management-of-mass-casualties/)
- Burns incident response team (BIRT) information pack (https://www.southwest-burncare-network.nhs.uk/mass-casualtymajor-incident)
- Clinical guidelines for major incidents and mass casualty events (https://www.england.nhs.uk/publication/clinical-guidelines-for-major-incidents-and-mass-casualty-events/)
- Management of surge and escalation in critical care services: standard operating procedure for adult and paediatric burn care services in England and Wales (https://www.england.nhs.uk/publication/management-of-surge-and-escalation-in-critical-care-services-standard-operating-procedure-for-adult-and-paediatric-burn-care-services-in-england-and-wales/)

Purpose

The purpose of this annex is to provide a description of the efficient and effective distribution of a significant number of people receiving burn injuries from one or more mass casualty incidents to burn services suitably equipped and staffed to deal fully with the presenting injuries.

Although there are more than 220 emergency departments (EDs), there are comparatively few places where patients with severe burns may be cared for by clinical specialists (see Appendix 1 for a list of all specialised burn services and the level of care). This is particularly the case for children. A burns mass casualty incident is likely to be declared for significantly fewer casualties compared to a typical trauma scenario, especially if serious burn injuries are involved. Incidents involving less than 10 casualties with serious burns will put significant strain on local burn services but more than 20 will impact national capability and resilience.

In the event of a major incident, burn injured patients will be taken to major trauma centres, trauma units and emergency departments as per the region’s casualty distribution plan. Patients will then be moved to a critical care unit or ward depending on the severity of their injuries and will remain there until a specialised burns bed is identified. During phase 2 and 3 of this response (Table 3), burns incident response teams (BIRTs) may be deployed to provide specialist advice and support to these departments.

This document does not apply to any direct requests for assistance from overseas. Such requests made direct to a burn service should be escalated to NHS England national Emergency Preparedness, Resilience and Response (EPRR).

Audience

This annex is aimed at services providing adult and paediatric care and other EPRR organisations including:

- major trauma centres (MTCs) and trauma units (TUs)
- specialised burns services (centres, facilities, units)
- plastic surgery services
- critical care services
- chief executives of NHS trusts and NHS foundation trusts
- ambulance services
- critical care transfer services
- helicopter emergency medical services (HEMS)
- clinical networks (including burns, trauma, extra corporeal membrane oxygenation (ECMO), critical care)
- EPRR officers
- regional operational centres (ROCs)
- integrated care boards (ICBs)

Background

An incident involving critically injured burn patients that exceeds the capacity of a local specialised burn service, a burns clinical network or national services, can happen in any community. Burn injury incidents are unusual in that a relatively small number of critically ill burn injured patients may create the need for a major incident response due to the limited number of burn services and thus burn beds across the country.

Burn patients are complex and require an extended and re-occurring length of stay. This becomes an even more likely scenario if the incident involves paediatrics. In burn major incidents, patients may be admitted with isolated burns or burns with other injuries. Patients with burns may have sustained other life-threatening traumatic injuries, and these require assessment and management according to standard resuscitation guidance. Decisions about priorities for the care of the traumatic injury and the burn should be by discussion and consensus between the responsible burn clinicians and trauma clinicians.

It is recognised that a burn major incident may overwhelm bed capacity and will have a significant impact on theatre capacity across the responding organisations, specialised burn services, burns clinical networks or nationally, depending on the level of routine activity at the time of the incident. Clinicians providing care for burn patients in England are almost exclusively burns and plastic surgeons.

The care of patients with severe burns may be provided on an in-patient or out-patient basis, depending on severity, progression and recovery. With a complex injury, the whole specialist burns multi-disciplinary team (MDT) are involved throughout the acute care period and may require continued input following discharge during rehabilitation and re-integration into society. The post-acute care may continue with the same MDT for some years, especially for children, and involve multiple out-patient interventions and several admissions to hospital for reconstructive surgery.

Levels of care provided for patients with severe burns in England are stratified and services are designated as shown in Table 1:

Table 1: Levels of care for patients with severe burns in England

Designation	Level of care	% total body surface area (%TBSA) thresholds
Burn centre	This level of in-patient burn care is for the highest level of injury complexity and offers a separately staffed, geographically discrete ward. The on-site facilities are up to the highest level of critical care and there is immediate operating theatre access.	Paediatric: All burns ≥ 2% TBSA
		Adult: All burns ≥ 3% TBSA

Designation	Level of care	% total body surface area (%TBSA) thresholds
Burn unit	This level of in-patient burn care is for a moderate level of injury complexity and offers a separately staffed, discrete ward.	Paediatric: Burns ≥ 2% and < 30% TBSA
		Adult: Burns ≥ 3% and < 40% TBSA
Burn facility	This level of in-patient burn care equates to a standard plastic surgical ward for the care of non-complex burn injuries.	Paediatric: Burns ≥ 2% and < 5% TBSA
		Adult: Burns ≥ 3% and < 10% TBSA

Few specialised burn services are co-located with a MTC, and there are differences in service provision across the burns clinical networks (Appendix 1).

The information that follows is directed at all NHS organisations and providers of NHS funded care and aims to help all who may be involved to plan, prepare and respond to all types of emergencies that may involve significant numbers of patients with severe burns.

Historical burn incidents

There were a number of serious events involving multiple burn injury casualties within the British Isles during the 20th century. It must be acknowledged, however, that none of these incidents have involved massive numbers of casualties.

Table 2 lists some examples of 20th century burn incidents.

Table 2: 20th century burn incidents

Year	Incident, Location	Injured	Burn Casualties	Fatalities
1982	Coal mine explosion, Cardowan	40	36	0
1982	Hyde Park bombing, London	23	5	3
1983	Harrods bombing, London	91	7	6
1984	Coal mine explosion, Abbeystead	44	44	16
1984	Refinery explosion, Pembrokeshire	16	16	4
1984	Oxford Circus station fire, London	15	15	0
1984	Putney gas explosion, London	10	10	8
1985	Ship explosion, Milford Haven, Wales	13	13	3
1985	Stadium fire, Bradford City	253	250	53

Year	Incident, Location	Injured	Burn Casualties	Fatalities
1985	Plane crash, Manchester	137	2	52
1985	M6 coach crash, Lancashire	27	2	13
1987	Kings Cross fire, London	45	24	29
1988	Piper Alpha explosion, North Sea	25+	25+	165
1989	Car bombing, Peterborough	>100	2	1
1992	Castleford chemical plant, Yorkshire	18	3	2
1993	Littlewoods store fire, Chesterfield	30	30	2
1994	Smithfield cinema fire, London	12	12	11
1998	Bombing, Omagh	336	7	29
1999	Soho nail bombing, London	81	Several	3

Year	Incident, Location	Injured	Burn Casualties	Fatalities
1999	Paddington/Ladbroke Grove train crash, London	447	>30	31
2001	Steel plant explosion, Port Talbot	15	Several	3
2005	Buncefield fuel depot fire, London	43	43	0
2006	July 7 bombings, London	700	40	54
2009	Lakanal Tower fire, London	20+	20+	6
2015	Shoreham air crash, West Sussex,	13	13	11
2017	Grenfell Tower fire, London	64	2	72

Burns incident response

Phases

There will be several phases during a burns mass casualty incident. Table 3 outlines the key phases which will need to be considered:

Table 3: Key burn incident response phases

Phase	Actions
Phase 1 (0-4 hours) **Initial transport**	• Patients will be transferred from the scene to major trauma centres (MTCs) and trauma units (TU)s. • Emergency departments (EDs) will be used for less serious casualties if the initial responding services become overwhelmed.

Phase	Actions
Phase 2 (4-12 hours) **Patient stabilisation and redistribution**	• Secondary triage of patients and, if required, relocation from TUs and EDs to MTCs. • A national burns strategic clinical lead will be identified. • Availability of burns incident response teams (BIRTs) will be identified and deployment process activated. • The National Burns Bed Bureau (NBBB) will contact all specialised burns services to confirm their current capacity and request that the services increase capacity by discharging and transferring patients as appropriate. This information will be conveyed to the national clinical cell. • Consumables for patients will need to be ordered from local NHS Supply Chain (NHSSC).

Phase	Actions
Phase 3 (12-48 hours) **Decision making**	• BIRTs will gather information from the responding hospitals, to include number of patients, injury severity and need for transfer using defined documentation. • The national burns strategic clinical lead will assist in clinical decision making relating to the placement of patients to specialised burn services. • The NBBB will continue to update the national clinical cell on burn services' capacity. • At this point, a request for the government to consider European aid may be made if bed capacity is insufficient.
Phase 4 (24-72 hours) **Prioritisation**	• Patients will be distributed for definitive care according to priority. • Transportation will be coordinated by the national clinical cell in liaison with retrieval services.

Phase	Actions
Phase 5 (96+ hours) **Extended**	• Patients will receive appropriate treatments in definitive specialised burn care settings once the surgical treatment is completed. • Following a burns mass casualty incident, longer term tracking of these patients is required to understand overall patient outcomes.
Phase 6 (96 hours – 2 years) **Rehabilitation**	• The effect of a burns mass casualty incident will have long term consequences, not only on the patient but on the specialised burn services. It is recognised that return to 'business as usual' may take many months. Patients will require rehabilitation for many months or years.

Notification of burns major incident

Notification of major incidents is described within the concept of operations for the management of mass casualties.

Upon declaration of a burn mass casualty incident the national EPRR duty officer will ask the National Burns Bed Bureau (NBBB) to notify all burn services directly of a burns mass casualty event. NHS organisations will also be notified through normal EPRR alerting routes.

The NBBB may also be notified by either a specialised burn service or through an ambulance control as requests for beds may come through these channels. Any incident declaration must be confirmed with the national EPRR duty officer. The

NBBB will be tasked with alerting all specialised burn services and ascertaining the current bed capacity for recording on the NHS Pathways directory of services (DoS).

On receipt of notification by the NBBB, all specialised burn services will close to new referrals to protect the limited beds. Each burn service will update the NHS Pathways DoS website declaring their service status as burn operational pressure and escalation level 2 (B-OPEL 2). However, any patients who are already in the referral pathway will be accepted. The specialised burn services will remain closed until they are either stepped down or begin to receive patients from the major incident.

Normal referral and transfer practice will be suspended. All major burns referrals during this time will be directed to the NBBB and be subsumed into the overall management of the major incident (including non-incident burn injured patients). All burn casualties from the scene of the incident will be taken to the nearest MTC or TU.

Specialised burn services will need to escalate internally to ensure the relevant departments within their organisation are notified that a burns incident has occurred within or outside of their catchment area and that their burn service is closed to new referrals and is declaring Burns Operational Pressures Escalation level 2 (B-OPEL 2) until informed they are stepped down.

Activation

Activation is described within the main concept of operations (CONOPs); however, activation may differ when there is a burn-only incident. In this case, initial notification and activation may come from the ambulance services or the specialised burn services due to the number of burn casualties being received. In this scenario, activation will be escalated through internal organisational alerting systems and an official declaration issued by NHS England.

If burn services are required within devolved administrations to support this response, activation will be coordinated in liaison between the NHS England Incident Management Team (National) (IMT(N)) and the equivalent organisation(s) in the devolved administrations.

Specialised burn services

Upon activation, specialised burns services will assess their current caseload and discharge or transfer patients as appropriate to free up capacity and identify surge capacity within their organisation. They will not take any further patients

(unless already accepted into the referral pathway). They will declare their B-OPEL status as level 2 and close their beds until either they are stepped down or start to receive casualties.

National Burns Bed Bureau (NBBB)

Upon activation, the NBBB will notify all specialised burn services and ascertain current bed capacity within burn service and their potential bed surge capacity once the actions described in 5.2 have been undertaken. They will contact all burn services and liaise with the national EPRR duty officer to determine further actions.

Roles and responsibilities

Primary roles and responsibilities of key responders in respect of a burn major incident are summarised as follows and are in addition to the generic roles and responsibilities found within the CONOPs.

NHS England

National EPRR

National EPRR will be responsible for establishing IMT(N) for the incident, in accordance with the CONOPs.

In addition to their role in the CONOPs, the national EPRR duty officer will:

- notify the NBBB of an incident and its location
- request that the Department of Health and Social Care (DHSC) informs the devolved administrations of an incident and its location
- ascertain who is available to act as the Burns Strategic Clinical Lead from the list of senior clinicians

In addition to their role in the CONOPS, the logistics coordination cell will:

- support the establishment of 2 burns clinical impact meetings via MS Teams with, separately, paediatric and adult burn services. The Incident Clinical Lead (National) and the Burns Strategic Clinical Lead will participate in both meetings
- ensure, with advice, that the appropriate number of BIRTs have been identified for the assessment of patients
- mobilise deployment of BIRTs from burns services furthest away from the major incident, as required

- arrange pick up and transportation of the BIRT members to a rendezvous point closer to the responding hospitals
- ensure accommodation, food and refreshments are in place for the BIRTs
- arrange transfer to a responding hospital and arrange a single point of contact and security clearance at the responding hospital
- arrange transportation home or overnight accommodation

National clinical cell and specialist burns advice

The national clinical cell will need clinical and strategic burn advice during the incident. This will be provided by a burns specialist from one of the specialised burn services. They will be known as the Burns Strategic Clinical Lead.

The senior NHS England duty clinical director will ensure that a clinical cell is formed, and that the senior clinicians and medical advisers from any devolved administrations are invited to the cell.

This clinician will ensure that clinical impact assessment meetings are held via MS Teams and, where necessary, that burns-specific calls are held using the agenda in Appendix 2.

The Burns Strategic Clinical Lead will:

- take part in MS Teams meetings with the clinical cell
- provide specialist strategic advice to the clinical cell on the management of burn-injured patients and on the movement and placement of patients.

Appendix 3 contains information on the Burns Strategic Clinical Lead, including a job description and person specification.

National Burns Bed Bureau (NBBB)

The NBBB will notify the specialised burn services of an incident, following initial notification and confirmation by the national EPRR duty officer. The IMT(N) will ensure that the NBBB is aware should the incident involve sufficient casualties to meet the definition of a mass casualty event in burns.

The main tasks for the NBBB will be to:

- contact all specialised burn services and request that:
- NHS Pathways DoS is updated immediately to reflect the current burn bed capacity and capability
- NHS Pathways DoS is updated to reflect potential surge bed capacity within 6 and 48 hours

- BIRT volunteers are identified and NHS Pathways DoS is updated to reflect how many BIRT surgeons, anaesthetists/intensivists and nurses are available to be deployed if requested
- liaise with national EPRR and the IMT(N) clinical cell to determine further actions
- continually monitor the availability of specialist burn beds
- ensure any direct referrals to the NBBB of burn injured patients outside of the major incident are logged as part of the major incident and given to the IMT(N) clinical cell to ensure these patients are captured for assessment and triaged as part of the major incident response.

Integrated care boards

ICBs will lead and co-ordinate appropriate system-level support to the affected trusts and providers, including support with repatriations if required.

Specialised burn services

Specialised burn services (with the support of their organisation) will need to take the following actions on activation:

- notify the on-call director for their hospital of the closure of the specialised burn service to new referrals (via organisational incident structures)
- ensure NHS Pathways DoS is updated to show the service as B-OPEL 2 (closed)
- ensure NHS Pathways DoS is updated immediately to reflect the current burn bed capacity and capability
- assess current caseload and discharge or transfer patients who no longer require specialist burn care
- consider repatriating patients to their nearest burn service if applicable and clinically appropriate
- increase intensive care unit (ICU), high dependency unit (HDU) and ward-level burn beds
- ensure NHS Pathways DoS is updated as soon as possible to reflect potential surge bed capacity within 6 and 48 hours
- review staffing capability and contact members of staff on their BIRT volunteer log to ascertain who is available to make up a BIRT and record their contact details for the national EPRR team and clinical cell
- ensure NHS Pathways DoS is updated to reflect how many BIRT surgeons, anaesthetists/intensivists and nurses are available to be deployed if requested
- provide clinical advice and support, as requested, to responding MTCs and TUs via telephone, MS Teams (or equivalent) as appropriate

- order emergency stock as required via NHSSC to ensure delivery within 6 hours of request
- ensure all patients referred to receiving specialised burn services are logged and that this information is passed to national clinical cell
- ensure requirements for the procedures for the preservation of forensic material are in place and followed

Staff deployed as part of response to an alternative hospital trust will be covered for indemnity as part of their employing NHS trust's membership of the clinical negligence scheme for trusts (CNST) administered by NHS Resolution.

Burns Incident Response Teams (BIRTs)

There will be a requirement for BIRTs to provide specialist burn care advice via telephone, MS Teams (or equivalent) or be mobilised to the responding or non-specialised hospital(s) in the days following a burn major incident. BIRTs will not be sent to the scene of the major incident.

A BIRT will comprise of 3 burns experts (burns surgeon, burns anaesthetist/intensivist and a senior burns nurse), ideally from the same specialised burn service. However, if it is not possible to build a BIRT from a single burn service, then a team could be made up of experts from different burn services within the same burns clinical network who have undergone the BIRT training together.

The BIRTs' main tasks will be to:

- assess the burn severity according to standardised criteria
- provide advice on appropriate dressings and pain management
- assess fitness for transportation, depending on the severity of organ failure and the need for replacement therapy
- collect and record demographic and clinical information using a standardised BIRT patient clinical assessment form
- provide the national clinical cell with an understanding of casualties and the severity of injuries, advising on the level of burn care required using the BIRT clinical impact assessment call – patient summary sheet (Appendix 8 of the BIRT information pack (https://www.southwest-burncare-network.nhs.uk/mass-casualtymajor-incident))
- provide critical care teams with appropriate advice on transferring burn injured patients
- BIRTs will not undertake the retrieval or transfer of patients

Further details and resources for BIRTs can be found in the BIRT information pack (https://www.southwest-burncare-network.nhs.uk/mass-casualtymajor-incident).

Major trauma centres, trauma units and emergency departments

There will be a requirement for the responding MTCs, TUs and EDs to:

- provide casualty information to the national clinical cell for assessment by the burns strategic clinical lead/BIRTs
- maintain a list of patients that have been referred, or need to be referred, to specialised burn services
- provide a designated person to act as logistical support for the BIRT on arrival and provide access to patient information, buildings and other logistical support as required.

Burns clinical network managers

The burns clinical network manager's role is to ensure NHS organisations providing specialised burn care services have a burns operational plan within their major incident plan and that it is tested and fit for purpose based on the requirements of EPRR guidance, burns guidance, the CONOPs and this annex.

Burns clinical network management teams will have a limited role in the response to an incident outside of normal working hours. If an incident occurs during normal working hours, the network managers may be able to give strategic advice to the national clinical cell and assist in identifying a burns clinician to act as the Burns Strategic Clinical Lead. The burns clinical network managers and specialised burn services within the networks will be significantly involved in the repatriation of patients over the weeks following an incident.

Burns patient management

The primary triage of patients will be undertaken in accordance with locally agreed MTC network protocols and procedures. It is possible that thresholds of care and survival may be reduced if the number of casualties is very large, complex or overwhelming. This could lead to potential degradation of care. The management of these patients is complex and national guidelines have been developed to facilitate care.

Responding organisations should refer to the specialties overviews section of the Clinical guidelines for major incidents and mass casualty events (https://www.england.nhs.uk/publication/clinical-guidelines-for-major-incidents-

and-mass-casualty-events/).

For clinical advice on the ground, the responding MTCs, TUs and EDs should contact any specialised burn service outside of the NHS England region in which the incident is taking place in and seek advice from the burns consultant on-call or the BIRT, if deployed.

All specialised burn services need to be aware that it is part of their role to provide this clinical advice in the event of a major incident.

Inhalation injuries

Inhalation injury remains a major factor complicating burn injury. It has a significant impact on all aspects of care and a marked adverse impact on mortality.

Management is complex and requires a multi-disciplinary team approach to aid diagnosis, upper airway management, mechanical ventilation and pharmacological intervention. However, in the event of a national Incident, isolated inhalation injuries may need to be managed outside of a specialised burns service.

Chemical injuries

For significant chemical injuries, there is a need to refer to the NHS England emergency preparedness, resilience and response (EPRR) hazardous materials (HAZMAT) and chemical, biological, radiological and nuclear (CBRN) guidance (https://www.england.nhs.uk/ourwork/eprr/hm/).

Patient transfers

Transport issues for moving critical care patients will be like other trauma level 3 patients. However, in relation to burns, there is a need to maintain core body temperature, a potential for increased fluid requirements and a need for accurate assessment of fluid resuscitation requirements.

Infection prevention

Consideration needs to be given to the potential for cross-infection of patients with severe burns, particularly if there are large numbers of severe burns. Several services have infection control issues and movement of patients between services (and, potentially, overseas) may lead to multi-resistant organisms which

have the potential to close services. The organisation's infection prevention control (IPC) team should be engaged during planning and response to the incident.

Capacity and demand management

There is limited specialist burns bed capacity in England and the devolved administrations.

The capacity of specialised burn services will depend on the type of incident that has occurred:

- A major trauma incident (blast, crush, puncture injuries) with a small number of burns casualties.
- A major burns incident, with many burns casualties, some with a trauma.

The age mix of casualties is also a crucial factor in determining what response is required. The number of children that will trigger a national or international response will be lower than for adults. There will be more significant capacity issues for children.

Consumables

Specialised burn services do not carry large stocks of dressings, spare equipment or drugs and, typically, only have sufficient to deal with fluctuations in their normal activity. Being an emergency service, they rely on re-stocking arrangements with their local NHSSC system and commercial services to deal with fluctuations in activity.

In the event of a burn major incident, it is the MTCs, TUs and EDs that will initially require access to increased amounts of specialised dressings and other consumables. NHS Supply Chain carries stocks of appropriate dressings and accompanying burn-specific consumables which can be ordered by MTCs, TUs and EDs, with a 5-hour delivery. This should be detailed in local plans.

Demobilisation or recovery

In the event of a major incident, the additional patients and associated bed utilisation would have a protracted effect on the bed occupancy for some considerable time after the incident. Depending on the numbers and severity, the impact could be up to 12 months or longer for an inpatient episode and a possible 24 months for rehabilitation, including post discharge.

It is not feasible to calculate or estimate the longer-term impact on activity and capacity in this document. It should be noted that in the event of a major incident involving cases requiring ICU care, the routine capacity available for ‘normal’ activity will be reduced, potentially causing other new patients to be transferred to specialised burn services in other burns clinical networks.

Staff welfare

Specialised burn services must give attention to the impact of a major incident on burn care staff. It is recognised that in the first days of a major incident impacting on burn care services and staff, the volume of work in theatres and on the ward will be dramatically increased. This is very likely to affect staff, due to increased physical and emotional demands. NHS organisations need to ensure that staff have access to the appropriate support services and consider debriefs within the services.

Appendix 1: Table of burn services by level of care

Burn care centres

Trust	Hospital	Adult or paeds	Co-located with MTC	Burns clinical network
Mid Essex Hospital Services NHS Trust	Broomfield (St Andrews) Hospital, Chelmsford, Essex	Both	No	London and South East
Chelsea and Westminster Hospital NHS Foundation Trust	Chelsea and Westminster Hospital, London	Adult	No	London and South East

Trust	Hospital	Adult or paeds	Co-located with MTC	Burns clinical network
Swansea Bay University Health Board	Morriston Hospital, Swansea, Wales	Adult	No	South West
University Hospitals Bristol NHS Foundation Trust	Bristol Royal Hospital for Children, Bristol	Paeds	Yes	South West
Birmingham Women's and Children's NHS Foundation Trust	Birmingham Children's Hospital	Paeds	Yes	Midlands
Nottingham University Hospitals NHS Trust	Nottingham City Hospital	Adult	Yes	Midlands
University Hospitals Birmingham NHS Foundation Trust	Queen Elizabeth Hospital, Birmingham	Adult	Yes	Midlands

Trust	Hospital	Adult or paeds	Co-located with MTC	Burns clinical network
The Newcastle upon Tyne Hospitals NHS Foundation Trust	Royal Victoria Infirmary, Newcastle-Upon-Tyne	Both	Yes	Northern
Alder Hey Children's NHS Foundation Trust	Alder Hey Hospital, Liverpool	Paeds	Yes	Northern
Manchester University NHS Foundation Trust	Royal Manchester Children's Hospital	Paeds	Yes	Northern
Manchester University NHS Foundation Trust	Wythenshawe Hospital, South Manchester	Adult	No	Northern

Trust	Hospital	Adult or paeds	Co-located with MTC	Burns clinical network
St Helens and Knowsley Teaching Hospitals NHS Foundation Trust	Whiston Hospital, Liverpool	Adult	No	Northern
The Mid Yorkshire Hospitals NHS Trust	Pinderfields Hospital, Wakefield, West Yorkshire	Adult	No	Northern

Burn care units

Trust	Hospital	Adult or Paeds	Co-located with MTC	Burns Clinical Network
Chelsea and Westminster Hospital NHS Foundation Trust	Chelsea and Westminster Hospital, London	Paeds	No	London and South East

Trust	Hospital	Adult or Paeds	Co-located with MTC	Burns Clinical Network
Queen Victoria Hospital NHS Foundation Trust	Queen Victoria Hospital, East Grinstead, Sussex	Adults	No	London and South East
Buckinghamshire Healthcare NHS Trust	Stoke Mandeville Hospital, Aylesbury, Bucks	Both	No	London and South East
Swansea Bay University Health Board	Morriston Hospital, Swansea, Wales	Paeds	No	South West
North Bristol NHS Trust	Southmead Hospital, Bristol	Adult	Yes	South West
Salisbury NHS Foundation Trust	Salisbury District Hospital	Both	No	South West

Trust	Hospital	Adult or Paeds	Co-located with MTC	Burns Clinical Network
Nottingham University Hospitals NHS Trust	Nottingham City Hospital	Paeds	Yes	Midlands
The Mid Yorkshire Hospitals NHS Trust	Pinderfields Hospital, Wakefield, West Yorkshire	Paeds	No	Northern
Sheffield Children's Hospital NHS Foundation Trust	Sheffield Children's Hospital	Paeds	Yes	Northern
Sheffield Teaching Hospitals NHS Foundation Trust	Northern General Hospital, Sheffield, South Yorkshire	Adult	Yes	Northern

Burn care facilities

Trust	Hospital	Adult or Paeds	Co-located with MTC	Burns Clinical Network
Oxford University Hospitals NHS Foundation Trust	Oxford John Radcliffe	Both	Yes	London and South East
University Hospitals Plymouth NHS Trust	Derriford Hospital, Plymouth	Both	Yes	South West
University Hospitals of Leicester NHS Trust	Leicester Royal Infirmary	Both	No	Midlands
University Hospitals of North Midlands NHS Trust	Royal Stoke University Hospital, North Midlands	Both	Yes	Midlands
South Tees Hospital NHS Foundation Trust	James Cook University Hospital, South Tees	Both	Yes	Northern

Trust	Hospital	Adult or Paeds	Co-located with MTC	Burns Clinical Network
Lancashire Teaching Hospitals NHS Foundation Trust	Royal Preston Hospital, Lancashire	Both	Yes	Northern

Appendix 2: Agenda: Burns clinical impact assessment MS Teams meetings

1. Update from system on number of identified burns patients at each responding location

a. Ward-level patients (include those still awaiting transfer to a ward from the ED or theatre)
b. ITU level patients (including number intubated and ventilated and any patients being managed in surge capacity)

2. Update from burn care services regarding capacity and capability

a. Adults
b. Paediatrics
c. Capacity to provide staff for a BIRT (burns anaesthetist/intensivist, burns surgeon, burns nurse)

3. When BIRTs have responded:

a. Clinical details should be collated using the template provided and a triaging of patients to take place as part of a virtual MDT to ensure that the appropriate patients are prioritised for transfer to available burns beds
b. Update from the national ambulance coordination centre (NACC) on availability of transfer resources
c. Availability of suitable transfer teams by trust

4. Infection control Issues

a. if terrorist attack: blood borne viruses
b. if incident abroad and repatriation: multi-resistant organisms

5. Rehabilitation issues
6. Repatriation issues
7. Supply chain
8. Recovery
9. Any other business

Appendix 3: Burns Strategic Clinical Lead role and person specification

To provide specialist clinical and strategic advice to the clinical cell in the event of a burns mass casualty incident.

Education and experience:

Essential:

- up-to-date revalidation and registration with GMC or NMC
- burns consultant (surgeon, anaesthetist/intensivist or burns nurse consultant), usually of at least 4-5 years duration currently working in clinical practice in burns
- emergency management of severe burns (EMSB)

Desirable:

- strategic leadership in a crisis
- defensible decision making
- emergency management of severe burns (EMSB) instructor
- advanced trauma life support (ATLS®) or advanced paediatric life support (APLS®)
- awareness of BIRT responsibilities

Role:

- take part in MS Teams meetings with NHS England national clinical cell
- provide specialist strategic advice to the NHS England national clinical cell on the management of burns patients, movement and placement of patients
- analyse relevant and available information to inform decision making
- work effectively with NHS England national clinical cell at a strategic level
- provide technical and professional advice as appropriate
- engage and communicate effectively in complex decision-making processes, and with national leaders and cross-government colleagues in the political decision-making process
- address medium and long-term priorities to facilitate the response and recovery of the burns services

Appendix 4: Burn incident response teams (BIRTs) person specifications

BIRT burns surgeon person specification

Education and experience:

Essential:

- up-to-date revalidation and registration with GMC
- consultant burns surgeon
- emergency management of severe burns (EMSB) or advanced burns life support (ABLS)
- the medical director for the trust signs off on the role and on freeing up the person from trust duties
- appropriate professional indemnity (trust may seek this from NHS Resolutions)
- ability and willingness to travel
- ability to work collaboratively at a distance and as part of a wider team
- completion of the mandatory e-learning modules via the NHS Learning Hub BIRT catalogue (https://learninghub.nhs.uk/Catalogue/BIRTs)

Desirable:

- advanced trauma life support (ATLS®) or advanced paediatric life support (APLS®)
- Edward Jenner Programme, NHS Leadership Academy
- completion of the desirable e-learning modules via the NHS learning hub BIRT catalogue (https://learninghub.nhs.uk/Catalogue/BIRTs)

Role:

- advise on the resuscitation and early management of severe burn injuries
- identify potential surgical emergencies
- provides advice for the ongoing management of severe burn injuries

BIRT burns anesthetist/intensivist person specification

Education and experience:

Essential:

- up-to-date revalidation and registration with GMC

- consultant anaesthetist/intensivist with a specialist interest in burns or a consultant intensivist with a specialist interest in burns
- emergency management of severe burns (EMSB) or advanced burns life support (ABLS)
- the medical director for the trust signs off on the role and on freeing up the person from trust duties
- appropriate professional indemnity (trust may seek this from NHS Resolutions)
- ability and willingness to travel
- ability to work collaboratively at a distance and as part of a wider team
- completion of the mandatory e-learning modules via the NHS Learning Hub BIRT catalogue (https://learninghub.nhs.uk/Catalogue/BIRTs)

Desirable:

- advanced trauma life support (ATLS®) or advanced paediatric life support (APLS®)
- Edward Jenner Programme, NHS Leadership Academy
- completion of the desirable e-learning modules via the NHS Learning Hub BIRT catalogue (https://learninghub.nhs.uk/Catalogue/BIRTs)

Role:

- advise on the resuscitation and early management of severe burn injuries
- identify the risk of injury to the upper and lower airway
- provide ongoing advice on the intensive care management of patients with severe burn injuries

BIRT burns nurse person specification

Education and experience:

Essential:

- registered nurse with NMC
- band 6 or above with minimum of 5 years burns experience
- emergency management of severe burns (EMSB) or advanced burns life support (ABLS)
- the chief nurse for the trust signs off on the role and on freeing up the person from trust duties
- appropriate professional indemnity (trust may seek from NHS Resolutions)
- ability and willingness to travel
- ability to work collaboratively at a distance and as part of a wider team

- completion of the mandatory e-learning modules via the NHS Learning Hub BIRT catalogue (https://learninghub.nhs.uk/Catalogue/BIRTs)

Desirable:

- advanced life support (ALS®) or European paediatric advanced life support (EPALS®)
- Edward Jenner Programme, NHS Leadership Academy
- completion of the desirable e-learning modules via the NHS Learning Hub BIRT catalogue (https://learninghub.nhs.uk/Catalogue/BIRTs)

Role:

- advise on the TBSA and depth assessment of severe burn injuries
- advise on effective fluid resuscitation and monitoring of patients with severe burn injuries
- advise on debridement and dressing of patients with severe burn injuries

Appendix 5: Burns annex action cards

National Burns Bed Bureau (NBBB) action card **The NBBB currently manages the adult and paediatric burn care capacity data held on NHS Pathways DoS bed capacity management system.** **Activated by NHS England national EPRR duty officer.**		
Action	**Check list**	**Time**
1. Contact all specialised burn services, alert each to the activation of the arrangements for burn mass casualty incident and request that NHS Pathways DoS (https://www.directoryofservices.nhs.uk/app/controllers/login/login.php) is immediately updated and take a verbal update of the current burn bed capacity and capability.		

2. Advise specialised burn services to assess preliminary escalation capacity for the next 6 and 48 hours and update NHS Pathways DoS within 30 minutes.		
3. Contact all specialised burn services again, within 2 hours of the first call, to confirm definitive escalation capacity for the next 6 and 48 hours and to update the NHS Pathways DoS as required.		
4. Advise specialised burn services to update NHS Pathways DoS every 4 hours or when capacity changes.		
5. Advise specialised burn services to identify staff from their BIRT volunteer log that are available to be mobilised if necessary and ask them to add the BIRT numbers on NHS Pathways DoS within an hour of call to request BIRT member availability.		

6. Collate above information provided by all specialised burn services into a national report of current burns bed capacity, surge capacity and BIRT availability for the national EPRR /clinical cell.		
7. Contact burns clinical network managers if within office hours.		
8. Continue to monitor capacity in specialised burn care services.		
9. Ensure that any direct referrals of burn injured patients outside of the major incident are logged as part of the major incident and given to the NHS England IMT(N)/clinical cell.		

Burns service and on-call burns consultant action card **Burn centres and units that can provide critical care to burns patients within the national referral criteria guidance** **Activated by NHS England IMT(N)**		
Action	**Check list**	**Time**
1. Specialised burns service to identify and notify on-call burns consultant once notified of a burns mass casualty incident.		

2. On-call burns consultant assumes control of their burns service’s major incident response, ensuring that the following tasks are undertaken.		
3. Inform organisation chief operating officer or deputy (in hours) or on-call director (out of hours) that a burns mass casualty incident has been triggered and determine if the activation of the organisation’s incident response plan is required.		
4. Ensure local departments and organisations are informed (with support from your organisation) that the specialised burn service is closed to new referrals. Any new referrals outside of the major incident should be directed to the NBBB for triage via the national clinical cell as part of the major incident triage process.		

5. Assess and prioritise current case load and consider if it is appropriate to transfer burns patients internally to a different department.		
6. Liaise with the NBBB to establish the burn service's current capacity and ensure NHS Pathways DoS website is updated immediately and at least every 4 hours, or as capacity changes.		
7. Within 30 minutes of being contacted by the NBBB, the nurse in charge or consultant update NHS Pathways DoS with preliminary estimate of 6- and 48-hours escalation capacity.		
8. Confirm with organisation IMT definitive 6- and 48-hours escalation capacity within the first 2 hours following contact from the NBBB and update NHS Pathways DoS. This figure should be updated every 4 hours or when capacity changes.		

9. Join MS Teams meetings about the formation of BIRTs when requested by NHS England.		
10. Identify staff available for a BIRT to travel to involved MTCs / TUs and inform them to be on standby to come into the burn service ready for deployment if necessary.		
11. Update NHS Pathways DoS with BIRT members availability as and when requested.		
12. Activate process to call in staff and instruct them on their arrival.		
13. Ensure that adequate staffing is available in a 24-hour shift pattern.		
14. Provide clinical advice and support as requested to responding MTCs, TUs and EDs or to the clinical cell/burns strategic clinical lead.		
15. Ensure emergency stock is ordered through NHSSC as required.		

16. Ensure appropriate tracking system for mass casualty incident is utilised.		

Burns incident response teams (BIRTs) action card **The BIRT will consist of a burns surgeon (team leader), burns anaesthetist/intensivist and burns nurse.** **They will be deployed from the burn services furthest away from the incident.** **Activated by NHS England IMT(N)/ clinical cell.**		
Action	**Check list**	**Time**
1. Ensure you have a travel bag with enough supplies for a minimum of 72 hours, including: a. clothing b. toiletries c. medications d. passport (if required) e. staff ID pass (to prove who you are and where you work and your clinical title or role within your home organisation) f. personal items		
2. Ensure you have all the relevant documentation (BIRT Information Pack) required to undertake and record your actions.		

3. Ensure you are aware of the designated collection point and be there, awaiting transport ahead of the agreed time with the BIRT response bag.		
4. Attend briefing session(s) prior to deployment.		
5. On arrival at responding organisation(s), prioritise patients in terms of severity and requirements for transfer to burn services and complete defined documentation within BIRT Information Pack.		
6. Nominate a spokesperson from the BIRT to liaise with the national clinical cell by telephone, MS Teams and email, as required.		
7. Give practical help and advice on burn care for individual patients, as required.		
8. Be aware of members of the press and ensure patient and staff confidentiality is maintained.		

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