Nursing Times Awards 2012 Winner

NHS
Manchester University
NHS Foundation Trust

BURNS NATIONAL INCIDENT PLAN

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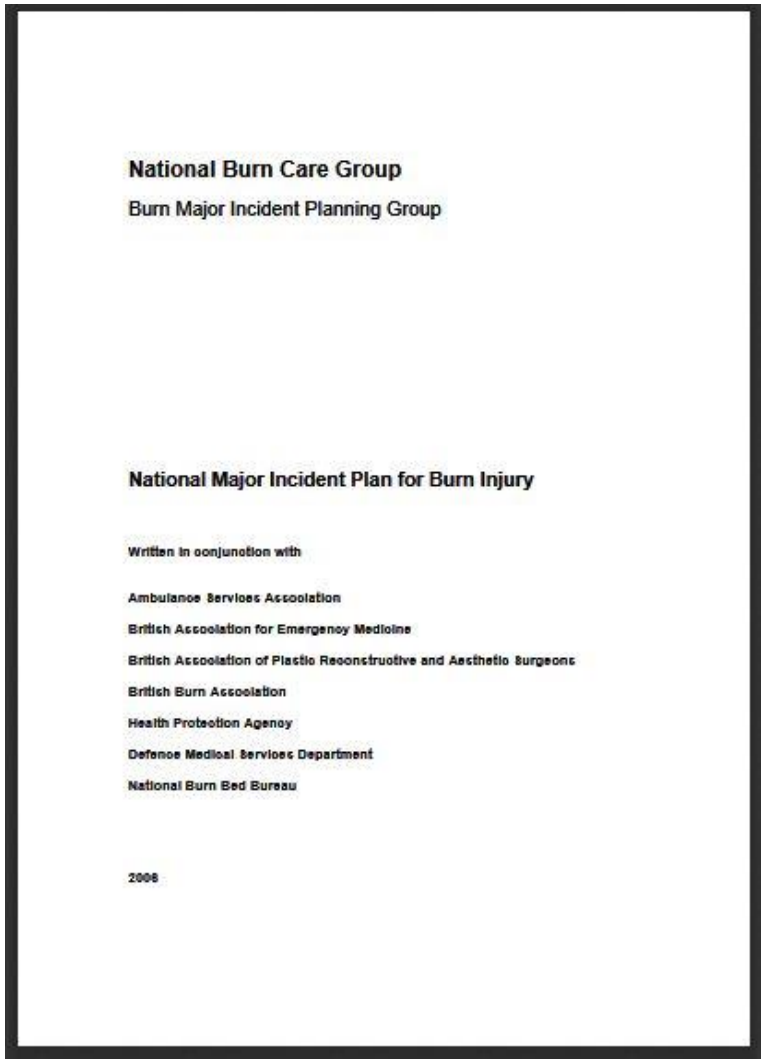
The Burns National Incident Plan

Year	Incident, Location	Number Injured	Burns Patients	Fatalities
1982	Cardowan, Coal Mine Explosion	40	36	0
1982	London, Hyde Park Bombing,	23	5	3
1983	London, Harrods Bombing,	91	7	6
1984	Abbeystead Coal Mine Explosion	44	44	16
1984	Pembrokeshire, Refinery Explosion	16	16	4
1984	London, Oxford Circus Station Fire	15	15	0
1984	London, Putney Explosion	10	10	8
1985	Wales, Ship Explosion	13	13	3
1985	Bradford City, Stadium Fire,	253	250	53
1985	Manchester, Plane Crash	137	2	52
1985	M6, Coach Crash,	27	2	13
1987	London, Kings Cross Underground Fire	45	24	29
1988	North Sea, Piper Alpha Explosion	25+	25+	165
1989	Peterborough, Car Bombing	>100	2	1

Year	Incident, Location	Number Injured	Burns Patients	Fatalities
1992	Yorkshire, Chemical Plant	18	3	2
1993	Chesterfield, Littlewoods Store Fire	30	30	2
1994	London, Smithfield Cinema Fire	12	12	11
1998	Omagh, Bombing	336	7	29
1999	Soho, Nail Bombing	81	Several	2
1999	Paddington, Ladbroke Grove Train Crash	447	>30	31
2001	Port Talbot, Industrial Accident,	15	Several	3
2005	London, Buncefield Fuel Depot Fire	43	43	0
2006	London, Bombings	700	40	54
2009	London, Lakanal Tower Fire	20+	20+	6
2015	West Sussex, Shoreham Air Crash	14	14	7
2017	London, Grenfell Tower Fire	64*	2*	79*

Been here before!



National Burn Care Group

Burn Major Incident Planning Group

National Major Incident Plan for Burn Injury

Written in conjunction with

Ambulance Services Association

British Association for Emergency Medicine

British Association of Plastic Reconstructive and Aesthetic Surgeons

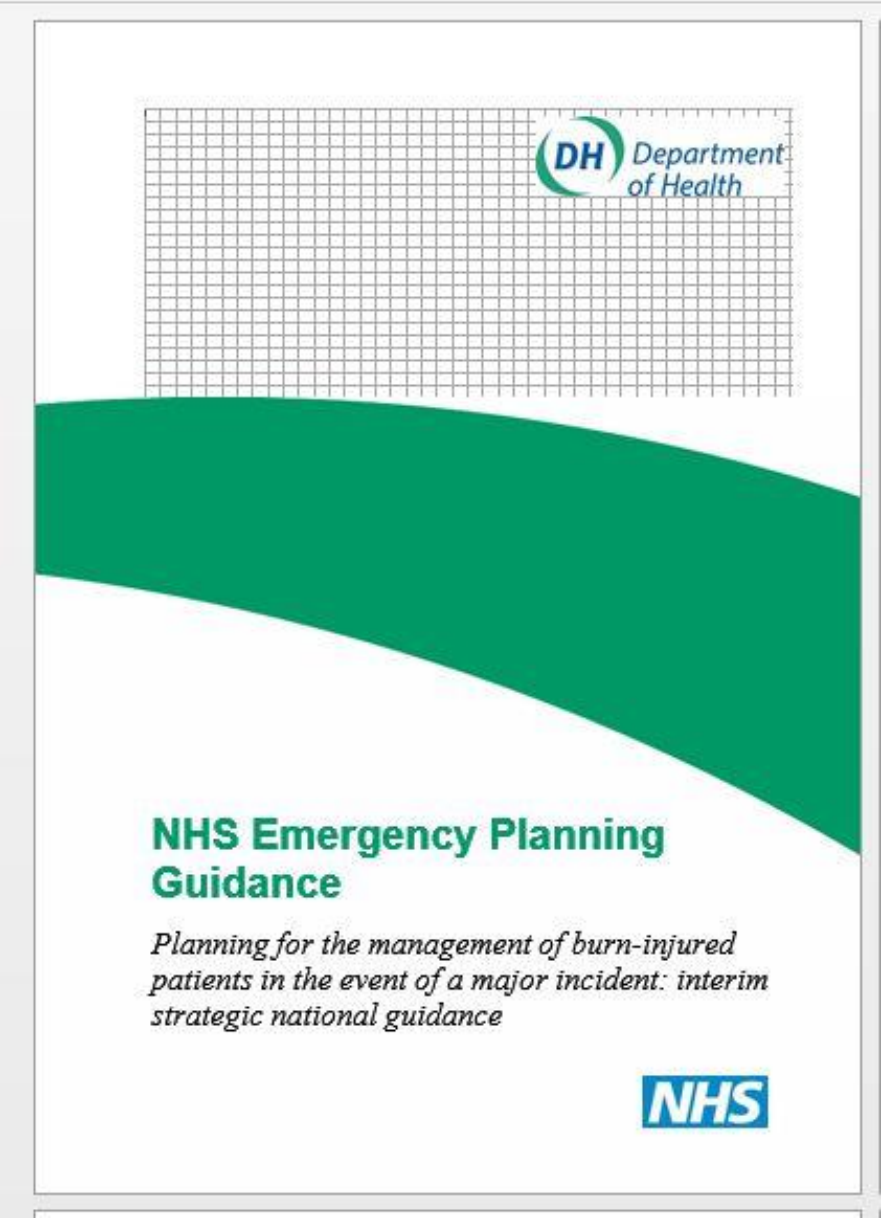
British Burn Association

Health Protection Agency

Defence Medical Services Department

National Burn Bed Bureau

2006



DH Department of Health

NHS Emergency Planning Guidance

Planning for the management of burn-injured patients in the event of a major incident: interim strategic national guidance

NHS

Background

- In the event of a Major Incident there may be a sudden spike in demand for burns care within the NHS.
- National plans for responding to mass casualty event recognise the potential need to move the patients with burns around the country.
- From experience of recent mass casualty incidents, the numbers of casualties that might be expected in the less critical range would be relatively small.
- The impact at the local and regional level, however, is likely to be significant.

Project Scope

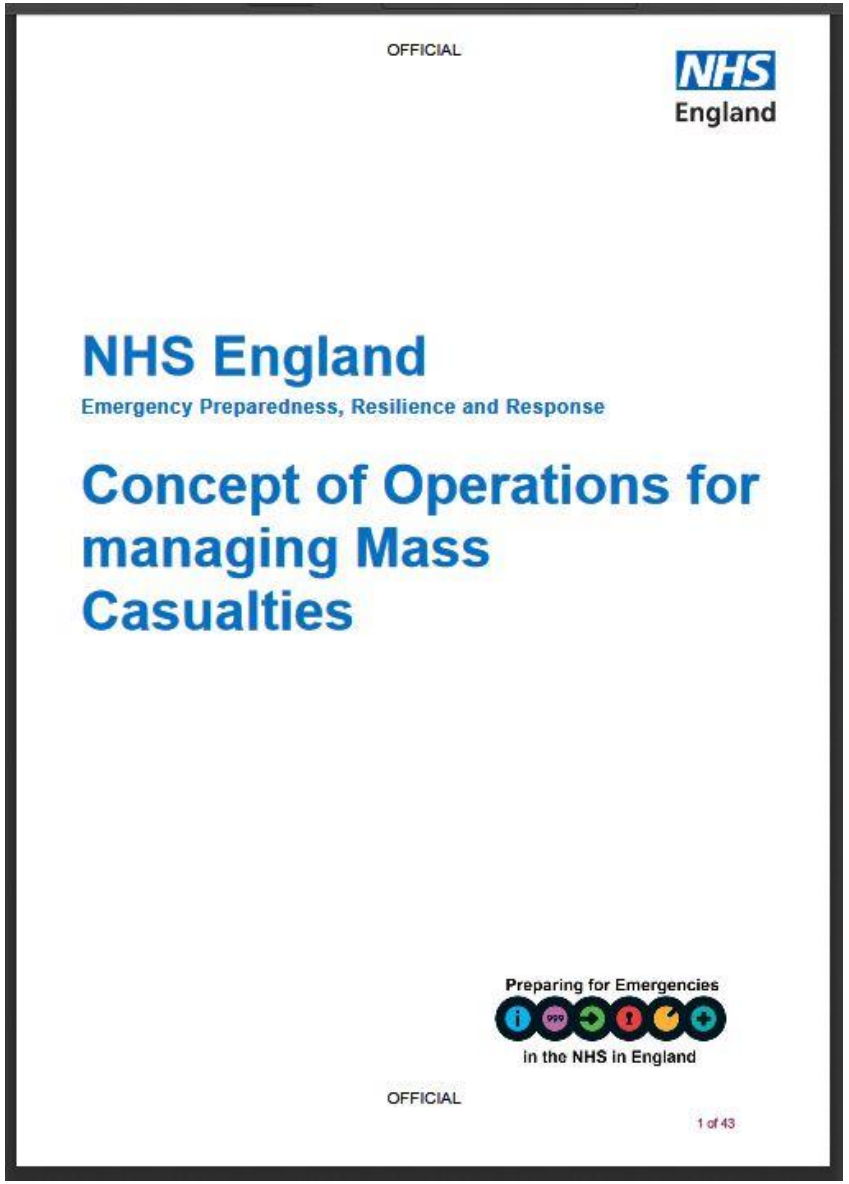
- The Plan was to cover:
- Adults and paediatrics
- Based on the assumption that there will be a national bed capacity management system in place.
- Burns in-reach services to hospital services managing burns patients.
- Time critical and non-time critical secondary transfers of critically ill patients
- Increased capacity in the event of a mass casualty - the level of increased bed capacity Trusts will be required to provide in the event of a mass casualty.

Out of Project Scope

- NHS Blood and transplant of blood, platelet and skin stocks
- National Supply Chain - Separate piece of work undertaken to look at supplies required
- Plastics Surgical assessments of burns patients within major trauma services. Would Plastic Surgeons who don’t assess significant injuries regularly be utilised.
- National Telemedicine - The EPRR CRG to consider the need for national telemedicine system to support EPRR.

Burn National Incident Plan

- Major Trauma & Burns/EPRR CRG
- Burns Clinical Representatives to include adult & Paediatrics
- Anaesthetic Representative
- Ambulance Service Representative
- Emergency Medicine Representative
- ODN Network Representatives
- IBID Representative
-
- Other representatives as required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Emergency Preparedness, Resilience and Response
Concept of Operations for managing Mass Casualties
Preparing for Emergencies
in the NHS in England
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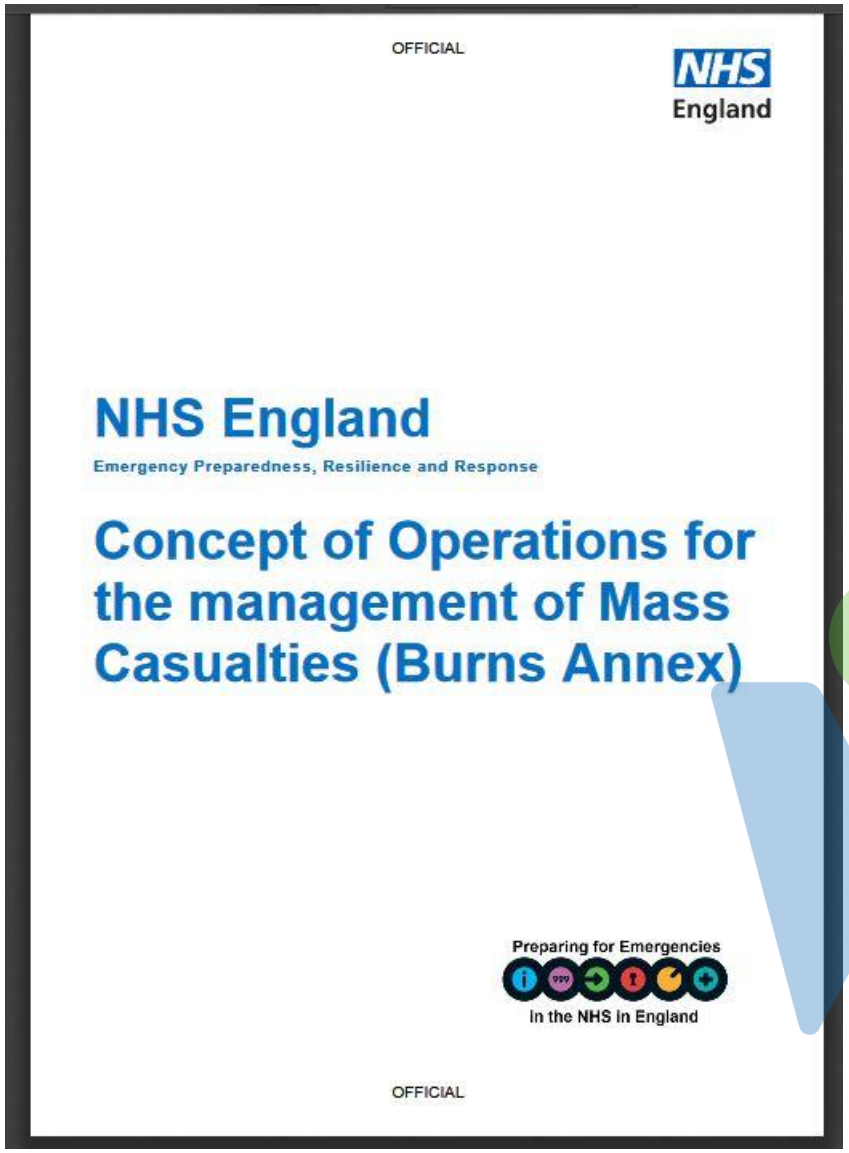
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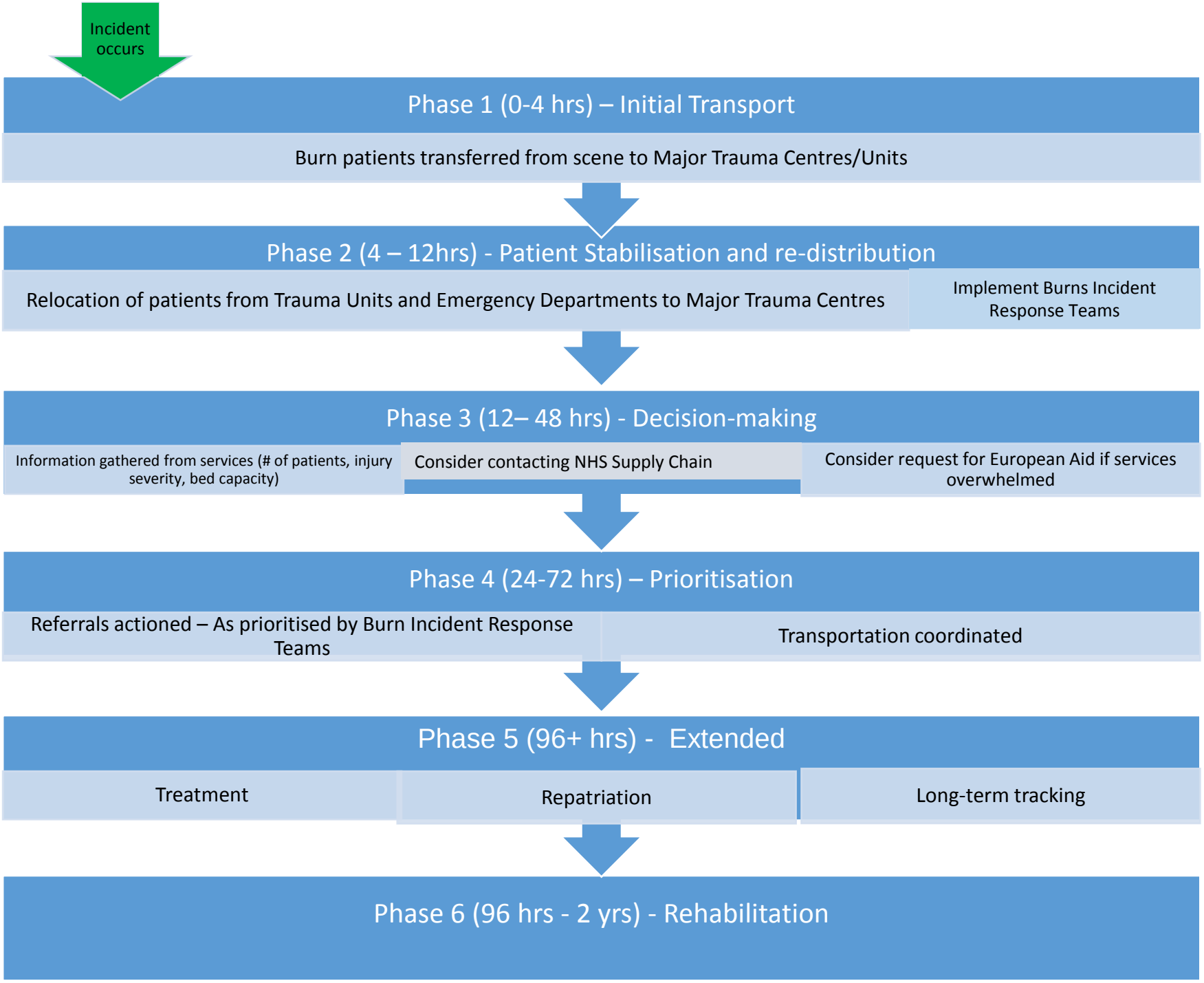
New Process

- All Burn Centres close immediately apart from patients in pathway
- Evacuation chain
  - Hold patients at their location
    - Major Trauma Centre/Unit
    - Major Incident Receiving wards
  - No further transfers until been adequately assessed and stabilised


Incident occurs
Phase 1 (0-4 hrs) – Initial Transport
Burn patients transferred from scene to Major Trauma Centres/Units
Phase 2 (4 – 12hrs) - Patient Stabilisation and re-distribution
Relocation of patients from Trauma Units and Emergency Departments to Major Trauma Centres
Implement Burns Incident Response Teams
Phase 3 (12– 48 hrs) - Decision-making
Information gathered from services (# of patients, injury severity, bed capacity)
Consider contacting NHS Supply Chain
Consider request for European Aid if services overwhelmed
Phase 4 (24-72 hrs) – Prioritisation
Referrals actioned – As prioritised by Burn Incident Response Teams
Transportation coordinated
Phase 5 (96+ hrs) - Extended
Treatment
Repatriation
Long-term tracking
Phase 6 (96 hrs - 2 yrs) - Rehabilitation

Strategic Response

- National Burn Bed Bureau
  - Determines bed availability
  - Informs MTC/MTU

- Burns Incident Response Teams
  - Remote Burn Services
  - Senior staff teams travel
    - Advise Incident control
    - Support local clinical staff

Burns Incident Response Teams

- BIRTs
  - Burn Surgeon
  - Burns Intensivist
  - Senior Burn Nurse

- Transport in from non-primary facilities
  - Formal assessment and triage
  - Clinical advice
  - Information to overall command and control

Capacity

- In the event of a significant number of patients with burns arising from a single incident or multiple incidents, there is no single burns service in the country that could cope.
- If Grenfell Tower patients made it to hospital this would have overwhelmed the country.
- Patients will need to be moved across networks and potentially overseas
- Need to ensure most appropriate patients are moved

Rationale

- Accurate calculation of burn size is a critical aspect of the initial assessment of a burn.
- Estimates of size and depth are important for prognosis, fluid resuscitation, calculation of nutritional status and quality of care.
- Treatment decisions could be potentially based on erroneous data, potentially impacting on morbidity, mortality and cost of care

Evidence

- Several studies have demonstrated inaccuracies in assessment of TBSA
- Errors include both over and under estimation and this can lead to inappropriate transfers to Burn services with implications for resource management
- In general smaller burns tend to be overestimated and larger burns underestimated.

Over-Estimation

- Results in excessive fluid resuscitation, and this can lead to pulmonary complications, compartment syndrome, increased need for escharotomy and progression of the burn wound
- Fluid creep – leads to increased morbidity, massive pleural and cardiac effusions, prolonged intubation and compartmental compression in unburned extremities or the abdomen
- Even when TBSA is correct, twice the volume of fluid required is often administered

Under-Estimation

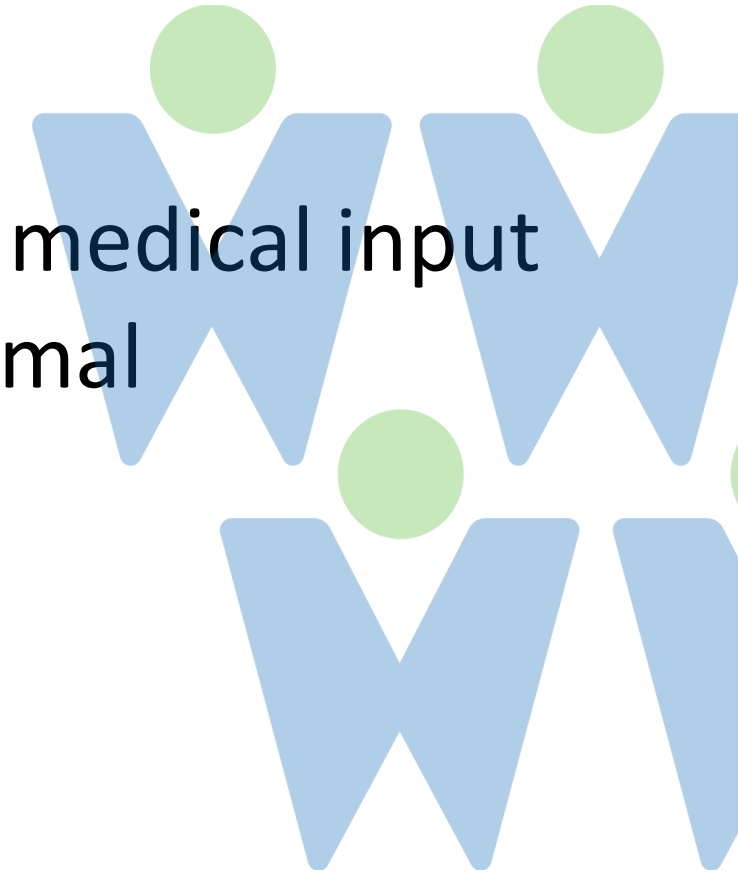
- Adequate fluid resuscitation needs to be instituted early to improve outcomes
- If fluid resuscitation is not adequately provided, this results in a decrease in cardiac output and hypovolaemia , which leads to hypo-perfusion of skin and viscera, depression of the central nervous system, acute kidney injury and cardiovascular
- This could lead to further costly interventions, (ICU, Haemofiltration, etc) deepening of the burn and longer lengths of stay.

Challenges

- Inclusion of erythema in TBSA might lead to overestimation
- Lack of exposure to major burns for MTC/TU staff
- Lack of experience of assessing and managing major burns - expert practice
- Inconsistencies with assessment tools used
- Reduction of surgical trainees in ED and minimal uptake of EMSB or equivalent courses
- Often don’t appreciate differences in BSA proportions between adults and children and changing percentage of body surface during development

Consequence of New Plan

- Patients may remain MTC/MTU's
  - For longer than ideal
  - To reduce the time to definitive care
  - Require higher level of early specialist medical input
  - Need more interventions in a sub-optimal environment



Capacity Planning

- National Burn Bed Bureau
  - Run by West Midlands Ambulance Service
  - Twice daily check on bed capacity in every unit

- Conflict

  Capacity to Admit v. Capacity to Treat

National Capacity? – It depends

- L1 - Walking Wounded <10% TBSA
- L2 - >10%< 25% TBSA
  - High Dependency bed
- L3
  - Intensive Care bed
  - >25% + Inhalation
  - >40% TBSA
    (single, two, multiple organ support)

National Capacity

Mean	Daily total	Majors	Ventilated
Paediatrics	44	19	1
Adults	100	37	6.5
Total	144	56	7.5

NHS North				
Adult ICU	Adult HDU	Paediatric ICU	Paediatric HDU	Total Beds
3	4	1	8	16
NHS Midlands & East				
Adult ICU	Adult HDU	Paediatric ICU	Paediatric HDU	Total Beds
7 (3 of which take paeds)	2	1	1	11
NHS South & Wales				
Adult ICU	Adult HDU	Paediatric ICU	Paediatric HDU	Total Beds
2	2	1	1	6
NHS London				
Adult ICU	Adult HDU	Paediatric ICU	Paediatric HDU	Total Beds
1	1	0	2	4
National Total				
Adult ICU	Adult HDU	Paediatric ICU	Paediatric HDU	Total Beds
13 (3 of which take paeds)	9	3	12	37

Capacity Planning

- National Capacity estimate of major burn injuries requiring ventilation
  - Adults ?20
  - Paediatrics ?10

  - European Aid if overwhelmed

Consequence

- All ICU's and PICU's will have to manage major burn patients even if burn service not collocated.

- National guidance is being developed

Exercise Phoenix

- 31st October 2018
- 148 burn/inhalation casualties

- Key Points:
- Need clear clinical advice to NHSE at beginning
- Separate Adults and Children for strategic purposes
- Revisit role of NBBB
- Action Cards need revisiting
- BIRTS Teams need identifying in all services – role of Facilities?

What's Next?

- Task & Finish Group 13th November
- Amendments undertaken then through Gateway process

- National guidance for MTU/TC's and ICU/PICU's
- Training on the Plan for Burns and Trauma services & BIRTS
- National agreement to allow movement of staff

Any Questions?

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