Responding to mass casualty terror attacks in UK mental health services: How have things changed since the 2005 London bombings?
A comparison of the NHS mental health responses to the terrorist attacks on the London (2005) and Manchester (2017), identifying service developments and ongoing barriers that urgently need addressing

Journal:	*BMJ*
Manuscript ID	BMJ-2018-047774
Article Type:	Analysis
BMJ Journal:	BMJ
Date Submitted by the Author:	02-Nov-2018
Complete List of Authors:	Allsopp, Kate; Greater Manchester Mental Health NHS Foundation Trust, Complex Trauma and Resilience Research Unit; Pennine Care NHS Foundation Trust, Manchester Resilience Hub Barrett, Alan; Pennine Care NHS Foundation Trust, Manchester Resilience Hub; University of Salford, School of Health Sciences Brewin, Chris; University College London, Subdepartment of Clinical Health Psychology Williams, Richard ; University of South Wales, Welsh Institute for Health and Social Care Hind, Daniel; University of Sheffield, Clinical Trials Research Unit Chitsabesan, Prathiba; Pennine Care NHS Foundation Trust, Young People's Mental Health Research Unit; University of Manchester, Division of Psychology and Mental Health, School of Health Sciences French, paul; Greater Manchester Mental Health NHS Foundation Trust, Psychosis Research Unit
Keywords:	terrorist attack, mass casualty incident response, screen and refer, outreach, psychosocial, mental health

Responding to mass casualty terror attacks in UK mental health services: How have things changed since the 2005 London bombings?

A comparison of the NHS mental health responses to the terrorist attacks on the London transport system in 2005 and Manchester Arena in 2017, identifying both service developments and ongoing barriers that urgently need addressing

Kate Allsopp[ab], Alan Barrett[ac], Chris R. Brewin[d], Richard Williams[e], Daniel Hind[f], Prathiba Chitsabesan[gh], Paul French[ij]

[a] Manchester Resilience Hub, Pennine Care NHS Foundation Trust, Manchester, United Kingdom

[b] Complex Trauma and Resilience Research Unit, Greater Manchester Mental Health NHS Foundation Trust, Manchester Academic Health Science Centre, Manchester, United Kingdom

[c] School of Health Sciences, University of Salford, Salford, United Kingdom

[d] University College London, Gower Street, London WC1E 6BT, United Kingdom

[e] Welsh Institute for Health and Social Care, University of South Wales, Lower Glyntaff Campus, Pontypridd, Wales, CF37 1DL

[f] School of Health and Related Research, Regents Court, 30 Regent Street, Sheffield, S1 4DA, UK.

[g] Young People's Mental Health Research Unit, Pennine Care NHS Foundation Trust, Manchester, United Kingdom

[h] Division of Psychology and Mental Health, School of Health Sciences, University of Manchester, Manchester Academic Health Science Centre, Manchester, Unied Kingdom

[i] Greater Manchester Mental Health NHS Foundation Trust, Manchester, United Kingdom

[j] Institute of Psychology, Health and Society, University of Liverpool, Liverpool, United Kingdom

Correspondence to: Kate.Allsopp1@nhs.net

Keywords: terrorist attack; mass casualty incident response; screen and refer; outreach

Competing interests declaration: We have read and understood the BMJ policy on declaration of interests and declare that we have no competing interests

Contributorship statement: The concept for the paper was developed by Barrett and Allsopp. The manuscript was drafted by Allsopp, Barrett, and Brewin, and reviewed and edited by all other authors.

Introduction

A 'mass casualty' incident is one that overwhelms health services and exceeds medical resources within a short space of time.(1) Alongside physical healthcare needs, people present at a terror attack have a 33-39% risk of developing posttraumatic stress disorder (PTSD) within one year.(2) This risk extends to 17-29% for those close to people who were killed and injured, 5-6% for emergency and recovery workers and 4% for local communities.(2) At least 20% of people directly affected may still experience symptoms of PTSD after two years.(3) Providing rapid, short-term support and long-term services is essential to meet people's psychosocial and mental health needs.(4,5)

The five attacks on the London transport system in July 2005 caused the largest mass casualty incident in the UK since World War II. Since then, there have been two other very large mass casualty incidents in the UK, the Manchester Arena bombing (2017) and the Grenfell Tower fire (2017); several other terror attacks in Europe have affected UK citizens. The majority of people may experience short-term distress, but generally cope well, however, some may have more persistent distress, and a sizeable minority may develop difficulties consistent with psychiatric diagnoses.(4,6) The latter is particularly common for people with past mental health difficulties.(4)

Following the London bombings (2005) and the Manchester Arena attack (2017), active outreach and screening programmes were used in an attempt to engage as many survivors as possible. This paper compares the mental health response to each incident, and outlines the service developments and barriers encountered.

London 2005

In July 2005, terrorists detonated bombs across the London transport system, killing 52 passengers and physically injuring over 750. More than 4000 people were estimated to be involved in some capacity. In a subsequent attack (21st July), the bombs failed to explode and no one was physically injured.(7) A systematic screen and treat programme was initiated. The 'NHS Trauma Response Programme' ran from September 2005 to September 2007, and was the first immediate response of its kind. A central screening team contacted and screened survivors and, if appropriate, assessed them face-to-face, referring selected people to specialist services for trauma-focused psychological interventions.(8)

Contact details were obtained for 910 adults and seven children from multiple lists of survivors, for example, from NHS hospitals and clinics (41.7%), and third sector organisations such as the Red Cross (27.1%). Just 4.3% of referrals were from GPs' surgeries. Mental health screening questionnaires were sent out to everyone who was referred. 596 adults (65%) returned at least one questionnaire, and 304 adults (51% of those who returned questionnaires) were then assessed as needing treatment.(9)

An assessment of capacity identified that local services would struggle to cope with the anticipated numbers of new referrals from the bombing.(8) Therefore, the programme supported additional clinical psychologists to deliver evidence-based therapies in three different posttraumatic stress services across London. Lead clinicians from each centre met monthly to ensure treatment quality and fidelity with NICE guidelines.(8)

The evaluation identified several barriers within NHS mental health services. The most significant were the lack of central institutional and financial planning for mental health needs following such incidents and the failure to share data about affected people, even within the NHS, because of

concerns raised by the Data Protection Act. Data protection problems led to some affected persons being contacted indirectly by third parties such as the police, but this was much less effective than direct contact with the screening team. As has been found in many international studies, normal care pathways involving GPs failed to identify and treat survivors who had longer-term problems arising from the bombing,(10) and, in some cases, blocked access to trauma-focused treatment because of geographical and financial restrictions.(8) The team which led the London response and its evaluation concluded that disaster responses should not automatically rely on usual care pathways, and that, particularly in the case of a widely-dispersed affected population, outreach and screening might be needed to ensure equal access to appropriate evidence-based care.(11)

Manchester Arena 2017

On 22nd May 2017, a suicide bomber detonated an explosive device in the Manchester Arena after a concert, killing 22 people and himself, and physically injuring 239 children and adults. A centralised outreach and screening service, the Manchester Resilience Hub, was established to manage the psychosocial impact of the event.

The coordination of the response in Manchester was located with the Strategic Clinical Network (SCN) operating across Greater Manchester, and further supported through the devolution approach, already underway in the city. The SCN collaborated with local, regional and national experts to develop a clinically meaningful offer. Local commissioning colleagues agreed to underwrite finances until a national settlement was agreed.

Crucially, the concert was ticketed, which facilitated identification of people thought likely to be affected, but additional lists were used to maximise coverage, including a list of people who were physically injured, obtained from the acute care sector, and a list of bereaved people from Greater Manchester Police, Victim Support and other voluntary, community and social enterprise (VCSE) organisations.

Clinical triage is facilitated by an online screening tool, allowing fast, large-scale screening, enabling early support for people whose scores indicate higher risk. Furthermore, the online system makes it easier to conduct follow-up reviews which are sent every 3 months in the first year, every 6 months thereafter.

The Hub's model takes a stepped-care approach, allowing a flexible response to meet differing needs and adapting personalised care pathways accordingly. Numbers for those present at the attack are estimated at around 19,500. Over 3200 people have registered with the Hub to date - over five times the number of people who returned questionnaires in London. Therefore the Hub has not (until recently, see below) offered direct treatment, but instead screens people; conducts telephone clinical triage of those displaying clinical symptoms; offers telephone support; and refers clients (or supports their self-referral) to evidence-based services close to where they live, to access formal psychological interventions when needed. The existence of Improving Access to Psychological Therapies (IAPT) services has vastly improved access to care for adults who use the Hub, in comparison with the services available in 2005. Table 1 summarises the key differences in the mental health response in London and Manchester.

TABLE 1 ABOUT HERE

13 years on: Ongoing barriers to care

Over a decade since the London bombings, barriers still remain to providing an expedient psychosocial response in the immediate aftermath of mass casualty events and later access to timely, specialist, trauma-focused psychological interventions.

Following the London 2005 attacks, key lessons were identified.(11) Three of them remained significant challenges when establishing and implementing the Manchester Resilience Hub.

First, a trauma response programme is an acceptable and appropriate approach but this requires

organisation of financial investment to be established in preparation for major incidents, not in response. Financial uncertainties in 2005 meant that mental health trusts provided the Programme without any guarantee that the costs would eventually be covered by the Department of Health.(8) Likewise, in Manchester, the mental health trusts set up the Hub, and Clinical Commissioning Groups pledged to underwrite this cost, both at the risk that national funding may not arrive.

Second, the evaluation of the London program highlighted challenges in identifying survivors from multiple sources. There were data sharing barriers across institutions and organisations regarding disclosure of who had been affected, (8,9) and subsequent guidance from the Cabinet Office (12) does not appear to have been effective. It was recommended (11) that a method be established for holding a centralised register of people involved in major incidents. Preliminary work on this has been conducted by Public Health England, (13) but not completed. In Manchester this was somewhat easier because it was a ticketed event, although ticketing websites allow for multiple ticket purchases, and with 'selling on', this limits who can be contacted directly. Despite previous work on data sharing, this was not a straightforward process and required substantial effort to develop a definitive list.

Third, flexible care pathways and access to trauma-focused psychological interventions are lacking. Usual care pathways, which are typically strictly bound by geographical areas, funding arrangements, and eligibility criteria, can block access to care in an emergency situation.(8) The London programme staff spent considerable time resolving the administrative and financial barriers preventing people from receiving treatment, despite most survivors living within Greater London. These difficulties became more problematic outside London, where specialist treatment was frequently unavailable or had insufficient capacity.(8) The difficulties experienced in London were even more challenging for the Manchester Resilience Hub because almost 80% of the people seeking psychological support live outside Greater Manchester.

Identifying new issues

In contrast with the London attacks, the Manchester Arena incident affected large numbers of children and young people (CYP). As of July 2018, one year after the setup of the Hub, 18.3% of people registered were under 16 years, and a further 8.4% were aged 16-17 years; compared with 7 CYP referred to the London programme – less than 1% (8). In addition, many people affected were visiting Manchester from across the UK.

The Hub offered support, consultation and training to a number of agencies, teams and therapists to facilitate access to services, however it could not directly support therapists in local services, as in London. The hub therefore facilitates referrals to existing services; this has highlighted the wide variability in access to trauma-focused psychological interventions in NHS mental health services

across the UK, particularly for CYP. However, once mainstream commissioned services are exhausted, the Hub has been able to provide direct treatment for a small number of CYP and families where local services struggled to provide appropriate or timely therapy.

Addressing these challenges

The challenges raised relate to creating and implementing a timely and effective care pathway to identify adults and CYP who require specialist assessment and treatment following mass casualty events. In both incidents, the mental health responses were similar, but resulted from initiatives created after, not before, the events.

The authors see it as imperative that psychosocial and mental healthcare responses to mass casualty events are fully integrated into all advance planning for emergencies, disasters and major incidents. This calls for a series of actions including:

- Disseminating knowledge about: a) the potential psychosocial and mental health impacts of disasters and major incidents; b) psychosocial interventions that may help to prevent people from developing severe distress; and c) evidence-based treatments for the sizeable minority of people who may develop severe distress.
- Creating policy and guidance on designing, planning, and delivering psychosocial and mental health care pathways following mass casualty incidents, and integrating them into the pre-incident planning of all responsible authorities.
- Identifying funding streams in advance, to enable local services to activate plans quickly and provide services for sufficient periods after major incidents. This is essential to prevent dilution of existing mental health services.
- Revisiting the requirements and regulations for effective information-sharing across agencies.
- Deploying a team of trained mental health advisers to advise on planning, and to support gold commanders following major incidents.

The implications are that all agencies should come together to ensure that their major incident plans include psychosocial and mental healthcare services. Their deployment must be practiced and tested in exercises. Much of the knowledge required has been published.(14) In 2009, NATO published a care pathway (6) and the Department of Health in England brought forward policy.(4) Since then, care pathways have been developed further,(15) but the contents and other actions we identify have yet to be implemented.

Further research

In addition to resolving the issues summarized here, further research is clearly required. The organisational process of setting up and implementing the Hub should be analysed to improve communities' disaster preparedness and the responses of national networks, including workforce planning. Having built on the screen and treat model used in London in 2005, the clinical effectiveness of the Manchester Resilience Hub should be evaluated. Finally, longitudinal studies should be used to explore recovery trajectories, and the factors that influence them, in order to maximise the effectiveness of future clinical responses to mass casualty incidents.

References

1. Ben-Ishay O, Mitaritonno M, Catena F, Sartelli M, Ansaloni L, Kluger Y. Mass casualty incidents - time to engage. World J Emerg Surg. BioMed Central; 2016;11:8.

2. García-Vera MP, Sanz J, Gutiérrez S. A systematic review of the literature on posttraumatic stress disorder in victims of terrorist attacks. Psychol Rep. 2016;119(1):328–59.

3. Whalley MG, Brewin CR. Mental health following terrorist attacks. Br J Psychiatry. 2007 Feb;190(2):94–6.

4. NHS. NHS Emergency Planning Guidance: Planning for the psychosocial and mental health care of people affected by major incidents and disasters: Interim national strategic guidance 30-7-2009.DH. 2009;95.

5. Lowell A, Suarez-Jimenez B, Helpman L, Zhu X, Durosky A, Hilburn A, et al. 9/11-related PTSD among highly exposed populations: a systematic review 15 years after the attack. Psychol Med [Internet]. 2017;(August):1–17. Available from: https://www.cambridge.org/core/product/identifier/S0033291717002033/type/journal_article

6. NATO Joint Medical Committee. Psychosocial care for people affected by disasters and major incidents. 2008;0–139.

7. Brewin C, Scragg P, Robertson M, Thompson M, D'Ardenne P, Ehlers A. Promoting Mental Health Following the London Bombings: A Screen and Treat Approach. J Trauma Stress. 2008;21(1):3–8.

8. Brewin CR., Fuchkan N, Huntley Z. Evaluation of the NHS Trauma Response to the London Bombings: Final report to the Department of Health. UCL. 2009.

9. Brewin CR, Fuchkan N, Huntley Z, Robertson M, Thompson M, Scragg P, et al. Outreach and screening following the 2005 London bombings: Usage and outcomes. Psychol Med. 2010;40(12):2049–57.

10. Bonanno GA, Brewin CR, Kaniasty K, La Greca AM. Weighing the costs of disaster: Consequences, risks, and resilience in individuals, families, and communities. Psychol Sci Public Interes Suppl. 2010;11(1):1–49.

11. Reifels L, Pietrantoni L, Prati G, Kim Y, Kilpatrick DG, Dyb G, et al. Lessons learned about psychosocial responses to disaster and mass trauma: An international perspective. Eur J Psychotraumatol. 2013;4(SUPPL.).

12. HM Government. Data Protection and Sharing–Guidance for Emergency Planners and Responders. 2007. 1-36 p.

13. Close RM, Maguire H, Etherington G, Brewin CR, Fong K, Saliba V, et al. Preparedness for a major incident: Creation of an epidemiology protocol for a health protection register in England. Environ Int. Elsevier Ltd; 2014;72:75–82.

14. Williams R, Kemp V, Alexander D. The psychosocial and mental health of people who are affected by conflict, catastrophes, terrorism, adversity and displacement. In: Conflict and catastrophe medicine. London: Springer; 2014. p. 805–49.

15. Williams R, Bisson JI, Kemp V. Health Care Planning for Community Disaster Care. 2018;(May):244–60.

Table 1*: Differences in the mental health response following the terrorist attacks on London (2005) and Manchester (2017)*

London 2005	Manchester Arena 2017
The majority of clients were adults; less than 1% of referrals were of children (N=7)	Large numbers of children and families; 26.7% of the Hub's clients are children and young people under 18 years of age (N=877)
910 adults sent screening questionnaires	More than 6500 ticket purchasers sent email invitations to complete screening, in addition to several hundred more whose details were provided by partner agencies.
565 adults returned at least one questionnaire	So far, over 3200 adults and CYP have completed questionnaires & registered with the Hub
Questionnaires sent by post, followed by face to face detailed assessment if appropriate	Online screening & automatic email reply offering advice (followed by telephone contact if appropriate)
Additional therapy resources paid for in local post-traumatic stress services	- Group events to support certain cohorts (family days; CYP; adults) - Home visit assessments for families with complex difficulties - Additional support provided in response to poor access to therapy: • Some individual therapy provided by the Hub where this was unavailable in local NHS services • Use of charitable donations to purchase additional therapy • Clinical advocacy for approximately 20% of cases where treatment was needed (e.g. senior negotiation around waiting times)

KEY MESSAGES BOX:

1. Developments since the 2005 London bombings enabled an improved mental health response to the Manchester Arena attack last year, including IAPT services which allowed timely access to care for many adults.
2. However, crucial barriers still remain, and these should be addressed urgently, including:
   a. lack of pre-established arrangements for financial provisions and data sharing
   b. no centralised system for listing survivors who may be in need of support, and allowing survivors to self-register
   c. lack of appropriate and flexible care pathways by which trauma-focused psychological interventions can be accessed
3. The Manchester attack also highlighted further challenges, including:
   a. frequently poor access to specialist care for children and young people
   b. highly variable access to specialist trauma-focused interventions across different geographical regions
4. Local and national agencies should work to resolve these issues by:

a. integrating care pathways for psychosocial and mental healthcare for adults and CYP into all advance planning for mass casualty incidents
b. identifying funding streams in advance, to enable a rapid response from mental health services
c. revisiting information-sharing agreements across agencies, so that people in need to support can be identified as quickly as possible.