SAVING LIVES IS NOT ENOUGH

A casualty-centred proposal identifying how Fire and Rescue Services can improve pre-hospital care and quality of life outcomes for burn survivors

Endorsed by

BRITISH BURN ASSOCIATION
BBA

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Disclaimer

The views and opinions expressed in this proposal are those of the authors and may not reflect the official policy or position of any organisation or contributors.

Contents

Dedication

This report is dedicated to the memory of Alan V Brunacini.

Alan was a prominent and highly regarded American Fire Chief, best known for advancing the principles and practice of fire command internationally and for his work on the NFPA standards committees. However, it was via his influential book "Essentials of Fire Department Customer Service" that the authors became aware of him. His argument for the need to 'be nice to Mrs Smith' and a customer-oriented culture was a rare, inspiring and reassuring find. Even more so, since it was published nearly 20 years earlier than this report was first produced. Amongst the necessity of process and procedures it is easy for a sense of humanity and humility to be pushed aside, or even designed out of the emergency services. Alan recognised this occurring and, despite some resistance, championed that customers should be at the very heart of what a service is and how it functions. Across the distance of time and geography between our respective publications, we also arrived at the same conclusion.

It takes courage and conviction to argue against established practice and conventional wisdom for an idea you believe in. These are qualities Alan had in abundance and were required to pursue his vision. The authors hope he would have approved of the spirit and content of this report.

Alan sadly passed away in 2017 and so we never had the privilege to meet him and discuss our respective work. However, we are very grateful to his son Nick Brunacini who has taken the time to appraise this publication and share his father's organisational philosophy.

"Alan Brunacini attributed any professional success he had as a Fire Chief to the revolutionary idea that a fire department only exists to deliver service to its customer base. This new approach provided much more clarity than our traditional mission.

When our Fire Chief initially broached the concept of customer service he said, "I have spent my life studying leadership. I could never make sense out of leading an organization who considers the fire, a force of nature, to be our primary customer. The simple shift of viewing and treating Mrs. Smith like a valued customer produced the only clarity to the field and study of leadership. Using customer service as the driving force behind everything a fire department does requires realigning how the bosses manage the workforce. When the leader of the organization wants the members to treat the customers with kindness and respect the bosses must treat the firefighters in kind."

Alan Brunacini is credited with having a major impact on the modern fire service. His legacy is simple: always be improving in the areas of firefighter safety and customer service."

Nick Brunacini

Introduction

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The Fire and Rescue Service (FRS) has a long and proud tradition of saving lives from the risk of harm posed by fire. Traditionally, its role has been to remove casualties from a fire scene and then, as soon as possible, hand them over to the Ambulance Service or other first responders to administer medical care whilst FRS resources return to fire-fighting in order to limit property damage.

This is clearly an essential and valuable contribution but, arguably, has encouraged greater attention on property rather than people (the opposite of the approach taken to Road Traffic Collisions). It could also be considered as a narrow interpretation of what 'saving lives' means, in that it does not fully recognise potential long-term risks and consequences.[1]

In recognition of this, there are further opportunities for the FRS to:
   i.   improve the ability to locate and protect casualties
   ii.   enhance the on-scene care and experience, and
   iii. contribute towards the long-term quality of life outcomes

As part of a ground-breaking study of human behaviour in Accidental Dwelling Fires (ADF), I have been fortunate to work closely with the burns sector since 2012. This helped build a missing and new understanding of the experience of being injured in an ADF from the burn survivor's perspective, as well as the resulting impact on those who provide care after the FRS involvement.

With continuous advances in knowledge and medical interventions, the burns sector and associated charities have been able to set their sights beyond saving lives and injury treatment. The aspiration is to return the burn survivor to their psychological, social, physical, aesthetic and functional pre-incident condition and ability.[2] Currently, the FRS is not aligned with this expectation and yet has a very influential role on the burn survivor's experience and outcome in the earliest stages of an event.[3]

Equally, due to its historical role, the FRS has not often been thought of as part of the pre-hospital care community by the burns sector. This means that there is limited dialogue between the respective organisations, and where it exists, it is often locally driven and based on specific medical interventions rather than a more strategic and holistic view of the entire burn survivor journey. With the addition of the human behaviour research, it is now possible for all parties to build a more complete end-to-end picture of the burn survivor experience and enhance multi-agency working.[4,5]

This proposal sets out improvements required to bridge the current gaps. Each of the 10 Elements can be actioned individually but should be considered as a package of linked measures - similar to the care bundle approach used within the health service.[6] In combination, the Elements take a significant step towards raising the minimum standard of care that the FRS provides to casualties. By utilising the knowledge and skills within the FRS and its partners, it is likely that most of the Elements could be achieved within a short timescale and at relatively low cost.

The individual Elements are based on one or more of the following methodologies:

    i.   reducing exposure to harm (avoiding injury)
    ii.   providing earlier opportunities for cooling or treatment to be given, and
    iii. assessing the options to positively contribute to improving quality of life outcomes

The Elements do not address specific clinical procedures or interventions, which are covered by other professional arrangements.

Adoption of this proposal would make a significant contribution towards improving the pre-hospital care, experience and outcome for the burn survivor. However, it is not an exhaustive list and should not be viewed as a single task to be completed. Rather, it represents a route which will help the FRS move towards providing a minimum standard compatible with other care providers.

Burn care professionals are constantly seeking improvements throughout the care pathway. As such, new arrangements and greater liaison are necessary to ensure the FRS can embed an ongoing commitment to achieving a common and minimum standard in partnership with others. This minimum standard will constantly be pushed higher, but to do so effectively, relies on all parties moving together, sharing knowledge, aspirations and keeping burn survivor's experience, needs and outcome as the common focus.[7]

> "The FRS has a very influential role on the burn survivor's experience and outcome in the earliest stages of an event."

Introduction

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The burn survivor's journey begins at the time of injury. Every service, and every emergency and healthcare professional involved become part of their journey to recovery. The rescue, retrieval and resuscitation process can take many hours and is dependent on the severity of injury, as the burn survivor is handed from the 999 call operator to the FRS, then to Ambulance Service, local Emergency Department and subsequently onto appropriate Burn Service.

Each service, each point of contact, each intervention leaves a trace on the burn survivor that will only become evident hours, days or even months later.[8] Each action and inaction have the potential to make a difference and will directly impact burn survivor's outcome and quality of life.[9,10]

It is known that prompt care at scene can be life-saving following severe trauma, however priority should be given to improving awareness of its influence on, and the needs of, those who provide care later on and most importantly - the likely subsequent life-changing outcomes for the burn survivor.[11,12] Whilst urgency and efficiency of a casualty-centred approach is recognised in all trauma, rapidly delivered specialist expertise is vital in burn care.[13] Decisions and treatment received at the scene, particularly the history and circumstances of injury, the quality of first aid and measures to minimise heat loss, often have profound effect on mortality and morbidity.[14] The quality of initial management of burn injuries can greatly influence long-term psychological, social, physical, aesthetic and functional outcomes.[15] Given the importance of prompt treatment in burns, 999 call handlers and fire fighters are ideally placed to play a crucial part in the early management of burn-injured casualties.[16]

Burns specialists have long recognised that the challenges posed by a severe burn injury require the support and expertise of a team of multidisciplinary professionals.[17] However, from the time of injury, burn survivors are assessed by and cared for outside of the burn speciality by a wide range of pre-hospital and trauma care providers. Exceptional emergency, trauma and rescue expertise is delivered to the burn survivor often amidst situational, safety and environmental factors that are far removed from the sheltered, heated and well-resourced burns unit setting.[18] Pre-hospital care providers form an essential part of the burn survivor's journey through burn injury, and as a result must be considered an integral part of the seamless burns team.[19]

Survival following burn injury has significantly improved, particularly in first world regions like the UK, and it is timely that attention needs to turn outwards to focus on quality of life outcomes following survival. For many years the business sector has understood the importance of 'customer experience'. Co-design approaches originated from the business world are now finding their way into all walks of life, including health. Stakeholder groups responsible for the care of the burn injured at various stages of their journey are called upon to join together to share knowledge, overcome barriers that affect the movement of knowledge across and between professional groups, and innovate.

This proposal offers a tangible opportunity for a national multi-agency collaboration with a view to support, and more importantly – expect, an evidence-based, standardised practice approach to casualty-centred pre-hospital burn care.[20,21]

"Each action and inaction have the potential to make a difference and will directly impact burn survivor's outcome and quality of life."

Executive summary

Introduction

This report sets out ten recommendations (Elements) for improving the pre-hospital care, experience and outcomes for burn survivors. The primary audience for these is the Fire and Rescue Service, although by necessity they require the engagement of the wider emergency service family. These new and transformative insights are achieved by placing the survivor journey and experience at the centre of the research and using an evidence-based approach. The Elements relate to operational practice and first aid options and do not address clinical practice.

The report concludes with Lessons Learned, which discuss inter-agency service planning and customer experience recommendations. The intended audience for these is policy makers in the emergency services, public sector, customer experience sector and anyone with an interest in policy innovation.

Background

The saving or preserving of life where it is imminently threatened by an emergency will always be the main priority for first responders and subsequent care providers. But with ongoing advances in technical knowledge and capability, being content to save a life is no longer enough.

The quality of life achieved for survivors matters very much. This extends well beyond any obvious physical injury to include the potential for long-term health risks including psychological injury and being left vulnerable to secondary consequences or harm.

Surviving a burn can be a long, painful and challenging process both physically and psychologically. Even small burns can be life changing due to an inability to resume previous work or as a result of adjusting to visible differences and others' reaction to them. The research suggests it is within the current ability of the pre-hospital responders to better recognise and address this broader set of aspirations.

The avoidance or mitigation of injuries starts from first contact (whether remote or at-scene), with every intervention or inaction being responsible for the eventual outcome. And yet, the pre-hospital period appears to focus on the desire to remove the survivor from the scene and transport them to hospital as quickly as possible, rather than fully recognising it as a distinct and important phase of care.

The Elements seek to improve the ability to locate and protect casualties, enhance the on-scene care and experience, and contribute towards the long-term quality of life outcomes. They should be considered as a single package of measures rather than individual pick and mix options. They are presented as far as possible in a logical and chronological sequence relating to the progress of an incident from the 999 call onwards. It is hoped this timeline approach highlights that each agency acting in isolation and in ignorance of the full survivor experience is unhelpful, as it forgoes the ability to demonstrate achievement of basic principles, such as "do no harm".

However, some Elements such as psychological wellbeing and customer experience run through all stages of an incident or contact. Customer Experience may be more familiar as a commercial concept but the relevance of its principles and practice to emergency services and the care of burn survivors are discussed. The way an event is experienced by a professional responder and member of the public are very different.

Executive summary

Summary of the Phases and Elements

Phase	Element number	Element title
Remote assistance	1	Use the 999 call to manage casualties during the pre-attendance period
Search and rescue	2	Use an evidence-based model to improve search and rescue tactics
	3	Develop the ability to protect casualties from first contact
	4	Recognise that age matters
Treatment at scene	5	Assess the benefit of fully cooling burns prior to removal from fire ground
	6	Develop a water strategy for the optimal cooling of burns
	7	Attend burn and scald only incidents to provide first aid
Scene to surgeon	8	Communicate circumstances of burn injury to clinical care providers
Psychosocial recovery	9	Assess the influence of FRS actions and terminology on psychosocial recovery
Customer experience	10	Introduce a customer reported experience and outcome framework

Taking the Elements forward

To fully achieve the ten Elements will require some further research, inter-agency discussion, flexibility in organisational roles and changes in practice. However, in most cases these should not prove onerous (particularly if done collaboratively) and are entirely justified by the anticipated benefits. In line with the research methodology, overseeing the next stage of development and implementation would suit a national inter-agency approach.

Lessons Learned

The Elements address what may be considered operational issues. Recognising that practice evolves within a wider environment, led to the identification of two strategic recommendations:

1) an integrated customer experience vision, principles and framework should be developed to direct individual and combined emergency service activity

2) inter-agency partnerships should ensure that they routinely adopt transparent, structured, consistent and evidence-based methodologies for service planning and design

One contributory factor to the current situation is the lack of a single organisation or body with responsibility for the end to end survivor pathway. This impedes communication, accountability and the ability to target collective resources on the most beneficial areas. It is hoped that a solution to this will be found if the existing fragmented and sum of the parts model is to be replaced by one that is optimised by design and fully aligned to the survivors' needs throughout their pathway.

Remote Assistance

At present, the 999 call usually identifies the nature and location of an incident in order to despatch the appropriate FRS resources. In most circumstances, the call is concluded, and the caller advised to await the arrival of the fire appliance.

What happens during the period between the 999 call and the attendance of operational crews at the fire scene is largely unknown and cannot be influenced by the FRS.[22,23] Any changes to the ground situation between the time the 999 call is received to the arrival of the FRS must be determined by the crew once they arrive on scene, which may potentially lose valuable time.

Recent research into human behaviour in dwelling fires has identified that, currently, the 999 call and pre-attendance period represent a missed opportunity to start actively managing an incident, including casualty care.[24] Additionally, this research has identified that approximately half of the Accidental Dwelling Fire (ADF) injuries occur before the 999 call and the other half of injuries are sustained after the call.[25] This suggests that there may be an opportunity to avoid post-call injuries, or provide earlier first aid advice, if contact with the caller was maintained.

Post-burn cooling is a vital part of burn care. The British Burn Association (BBA) recommend that the earlier the 20 minutes water cooling of a burn is undertaken the better the outcome for the casualty.[26]

In recognition of the above, it is suggested that the 999 call should:

   i.   include the requirement to seek information from the caller about the presence and status of casualties. If necessary, first aid advice could then be provided remotely by the FRS control or by transferring the call to the Ambulance Service.[27]
   ii.   be routinely kept open until the crews arrive in order that any further developments in terms of casualties are known about and updates passed onto incoming crews.

> "What happens during the period between the 999 call and the attendance of operational crews at the fire scene is largely unknown."

Keeping a caller on the line would provide an opportunity for the FRS to deter people from taking actions, which could lead to an injury. This is a route that needs exploring but requires careful consideration of the evidence and should not be predicated on the current assumption that the public will do as they are told, or that they have the same priorities as the FRS.[28] Human behavioural research has much to offer and should underpin any development of this option. To be effective, the FRS will need to address the motivations and concerns of those present as well as keeping them safe in those activities. Routinely capturing and assessing the data from 999 calls would be a beneficial step towards building an evidence-based understanding of, and ability to manage, the risks at the time of the 999 call and prior to the FRS attendance.

Further to the above, it is suggested that, consideration should be given to options based upon actively recognising the capability of the public to act quickly and effectively as first responders before the arrival of the emergency services, as demonstrated by initiatives such as Citizen Aid.[29] The general public are a valuable resource and, if recognised and supported, could provide timely assistance in the critical early stages of an incident.[30]

There may also be opportunities to prevent or better assist the injuries incurred before the 999 call is made, however this discussion is beyond the scope of this proposal. This should form the basis of a later phase of activity, once the Element above has been achieved.

Element 2:   Use an evidence-based model to improve search and rescue tactics

Search and Rescue

It is not clear what assumptions or evidence underpin current breathing apparatus search techniques to give confidence that the FRS can reliably and consistently implement the most effective search plan to optimise survivability and quality of life outcomes for the burn survivor.[31]

For example, many will be familiar with the long-standing teaching that children hide under beds and in cupboards.[32] The evidence source for this belief has not been identified but may be from fatal fire outcome investigations where hiding was the last act of those concerned. However, first-hand accounts from child survivors about their behaviours and motivations are almost non-existent in the literature.[33] As a result, it is not known where non-fatal children are most likely to be found during a search. It is perhaps difficult to imagine the experience of an ADF from a child's perspective but they are likely to interpret and respond to a fire differently to adults.[34] There is likely to be a significant variation in comprehension and behaviour exhibited at different stages of child development, highlighting the need for research in this area.

Dwelling fires have long accounted for a disproportionately high number of injuries.[35] The amount of ADF's have significantly reduced over time.[36] However, when they do occur, the likelihood of an ADF causing a fatality or injury has not followed a similar decreasing trend.[37] This suggests that there is a need to examine the reason for this in greater detail in order to be able to design appropriate interventions.

> "LIFEBID project… challenged the FRS assumptions about the public's actions and capability prior to the arrival of the FRS."

Some of this may be attributable to the focus on measuring attendance times, which are increasing despite various initiatives to reverse this trend. Although it is an important metric, attendance time alone is insufficient to appraise operational performance.

The actions after arrival have a much greater impact on the outcome and are subject to greater variability. This period could be considered in terms of the Rescue Minutes concept. This period starts from arrival on scene and extends through to the conclusion of search and rescue, with the casualty removed to a place of safety or the premises fully searched, with no persons found.

However, there are large gaps in relation to the recording of information during the Rescue Minutes period. This includes useful data, such as any assumptions made by crew, the specific intelligence available, their search plans, the equipment taken, the time to locate a casualty, the time to affect a rescue and the casualty condition throughout rescue. Whilst these may be discussed within local incident debrief arrangements, there is nothing to suggest that the detailed circumstances of all rescues and injuries are routinely and centrally collated to inform evidence-based practice.

Search and rescue effectiveness would be enhanced through the development of an end-to-end data model covering each incident phase. This should sufficiently capture key events and outcomes by the FRS and others. Capturing the contribution of the public or partner agencies is essential and would provide valuable means of gaining a holistic understanding of an incident. A good example of this is the LIFEBID project, which challenged the FRS assumptions about the public's actions and capability prior to the arrival of the FRS.[38]

The ability to record relevant detail and learn from every rescue would provide a valuable opportunity to improve the knowledge that would continually advance casualty-centred rescues. Reducing the time it takes to locate casualties should reduce exposure to harmful products, limit injury severity and improve survivability.[39]

Element 2:   Use an evidence-based model to improve search and rescue tactics

Search and Rescue

Over time, the Rescue Minutes data would build up to identify trends and evidence the risk and mitigation factors that link to achieving the best possible outcome for casualties. A robust source of search and rescue data would inform evidence-based operational tactics or strategies. Unlike attendance times, these can be directly influenced and enhanced through pre-planning and training to improve the outcomes for the public.[40]

The data would also be valuable as a generic operational intelligence resource to inform real-time search and rescue operations, supplementing incident-specific information. Emerging technology, such as Artificial Intelligence, will provide the ability to capture a wider type of data sources and process it with greater speed and accuracy.

It is proposed that a minimum dataset required to underpin casualty-centred searches should be identified and routinely collated to provide an ongoing national evidence base to continually improve search and rescue techniques.

Recording the additional data proposed above would also benefit the process of introducing any new equipment or procedures. These can be adopted for many reasons, including operational effectiveness, fire fighter safety or to improve search and rescue. However, doing so without an effective and transparent quality assurance process inclusive of pre-introduction assessment and post-implementation monitoring, can be detrimental to the time taken to affect search and rescue.

"FRS must be able to demonstrate that a change in one part of the timeline is not detrimental elsewhere or to the overall outcome."

In acknowledgement of the emphasis on attendance times and public guidance that every second counts, the FRS must be able to demonstrate that a change in one part of the timeline is not detrimental elsewhere or to the overall outcome. Currently this is not the case and it is not possible to quantify the benefits or avoid unintended and harmful consequences.

Element 3: Develop the ability to protect casualties from first contact

Search and Rescue

Protection of casualty during egress

Once a casualty is located, current procedures rely on removing them to fresh air as quickly as possible, often retracing the ingress route rather than using the nearest available exit. This may require a casualty to be moved through areas affected by the fire or its products.

FRS personnel are protected from the respiratory and thermal threats from fire scenes by their Personal Protective Equipment (PPE) and specialised training. However, during their egress, the casualty may be exposed to further harm from the toxic products of combustion or radiant heat and thus inadvertently sustain concurrent injuries.[41] In addition, while insulated from the direct effects of the fire, crews may not fully appreciate the risk of ongoing harm, discomfort or distress experienced by the casualty. Therefore, despite being subjected to the same environment, the standards of protection for the public and FRS personnel are very different.

Ongoing investment in PPE for working in irrespirable and hazardous environments underpins continuous improvements in fire fighter safety. Yet there has been little, if any, corresponding focus on enhancing the respiratory and thermal protection afforded to the public - from the point of first contact at the fire scene to reaching a place of safety. The principle of removing the unprotected casualty as quickly as possible to fresh air has not changed for decades despite the evidence showing that more injuries and fatalities are attributed to smoke than flame.[42] However, it is not a standard procedure to equip crews with the ability to protect casualties during their egress. Whilst there are potential differences in the specification or user requirement, it would seem reasonable to assume that the technical challenges of providing PPE for the public could be overcome.

> "Despite being subjected to the same environment, the standards of protection for the public and FRS personnel are very different."

The above outlines the need to protect a casualty from the point of first contact at the fire scene and assumes that egress will be made without delay through a potentially hazardous environment to a place of safety. Two further situations are discussed below.

Immediate removal may not be possible due to the urgent need for medical care prior to rescue

In this scenario, it may be that it is either required, or preferable, to provide some form of limited medical care prior to removal. This becomes feasible if the casualty is in, or can be moved to, a place of relative safety within the local environment to administer life-saving interventions before a standard exit can be performed.

Further assistance is required to affect a rescue

Under these conditions there may be:

    i.   a slight delay due to the need for further on-site assistance or equipment to affect a rescue,
   ii.   significant delay to extrication due to the need for specialist equipment, or
  iii.   no means to remove a casualty.[48]

In these circumstances it may be necessary to protect the casualty in situ for a period of time or, potentially, until the fire has been contained. This may require new operational tactical options as well as consideration of the means to physically protect the casualty in terms of PPE.

Element 3: Develop the ability to protect casualties from first contact

Search and Rescue

It is recognised that both scenarios are rare. However, they are foreseeable and have the potential to increase for example, due to the projected rise in age-related mobility impairments and obesity.[49,50] On this basis, the FRS may now need to start considering how to respond to highlighted incident trends, particularly as these may represent some of the known vulnerable groups.

It is proposed that the FRS consider its current operational capability and future needs to manage the above situations. Guidance or operational procedures should formally recognise these scenarios and outline standardised tactical options.

It is proposed that the FRS should develop the ability to enter a property routinely equipped to protect casualties from smoke and heat as soon as they are located and during their egress. Ideally, any solutions should seek to offer casualties the same level of protection as that of the FRS personnel.[47]

For certain risk types (e.g. complex building, which may delay the normal FRS deployment time), the merit of encouraging individual ownership of smoke hoods as part of the agreed fire safety plan might be an effective way to facilitate safe self-evacuation during the early stages of a fire.

> "Any initiative regarding operational practice should always be subject to the "Do No Harm" principle."

Do No Harm

Any initiative regarding changes to operational practice should always be subject to the "Do No Harm" principle.[43,44] In fact, the aspiration should be to continually enhance public safety in line with improvements to that of the FRS personnel.

Public advice

Whilst discussing the effects of smoke it is appropriate to note that there is also an inconsistency between public advice and operational practice. The FRS message to the public has been that as few as two to three breaths will result in unconsciousness or death.[45] Yet many casualties will be exposed to significantly more than this, prior to FRS arrival and whilst directly in their care during a rescue.[46] If the FRS continues to support and promote the message that "three breaths can kill", then the lack of ability to protect a casualty on first contact would seem to be even more difficult to justify.

Element 4:   Recognise that age matters

Treatment at scene

There are a number of factors associated with an increased risk of someone dying as a result of a fire.[51] Of these, age is one of the most recognised but operational practice does not seem to fully recognise the risk posed to younger and older groups from injuries that may initially not have cause for concern.

However, age and frailty are known to be critical when considering the impact of a burn or scald injury.[52,53] These have been found to be reliable indicators of an increased risk of a fatal outcome compared to similar injuries for other ages.[54-56] Both younger and older people are at a greater risk of dying or experiencing significant morbidity than other age groups from injuries that could be considered 'minor' by the FRS.[57,58]

An injury that appears minor at the scene can become fatal at a later stage due to consequences of the primary injury or secondary complications as a result of limited physiological reserve and co-morbidities.[59,60] Even in the absence of a physical injury, the distress of experiencing a fire can pose serious health and wellbeing risks to the casualties.[61,62] These important considerations are not fully recognised in current operational practice.

Some essential prognostic information indicative of higher likelihood of mortality might not be immediately known by the attending FRS crews.[63] These are specific to the individual and cannot be pre-empted until a full medical history and existing conditions are ascertained. As a result, it is proposed that for younger and older casualties, any burn or scald injury should be considered as serious or life-threatening until proven otherwise and this risk should be incorporated into planning and response guidance.

Further research is required to better understand the FRS assumptions and evidence around age as a risk factor.

Guidance on the care and treatment should recognise the increased vulnerability of the younger and older casualties following a traumatic burn or scald injury. This should then be explicitly addressed in the FRS operations from the 999 call onwards.

The FRS Incident Recording System uses standard categories to identify the nature and severity of an injury against pre-determined classifications and criteria.[64] However, in order to better understand the risk to life this data should be cross referenced against age.[65,66] Further research may be required to interpret this finding for practical application but it is suggested that this would have implications for prevention, protection and response policies.

The ability to join up data from different emergency and healthcare services would give an end-to-end view of casualty trends and experiences.[67] This may prove valuable in jointly prioritising areas for improvement and making evidence-based cost-benefit decisions from the wider perspective rather than as individual organisations.[68] Compliance with data protocols and practical considerations of sharing or analysing different data formats would need to be addressed but, given the benefits to patients, a solution should be achievable.

"It is proposed that
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Element 5: Assess the benefit of fully cooling burns prior to removal from fire ground

Treatment at scene

"Period between removal from the scene to a place of care can vary significantly and often exceeds the period during which cooling is effective."

FRS crews have the ability to provide first aid treatment and are able to cool a burn using water sources located at the scene or from the appliance.[69] However, the aim is usually to hand over the burn survivor to the Ambulance Service as soon as possible for transfer to the nearest trauma hospital, allowing the FRS to concentrate on extinguishing the fire. For the ambulance crew, continuing to cool a burn with water while in transit is challenging and has limited efficacy. Burns will continue to evolve in depth and size if timely and appropriate first aid is not delivered at the earliest possible opportunity.[70,71]

The period between removal from the scene to a place of care can vary significantly and often exceeds the period during which cooling is effective.[72] During this time and in absence of prompt first aid, the dynamic nature of the burn injury continues to cause further damage due to wound progression.[73] A number of factors are involved not all of which can be mitigated by the FRS in the pre-hospital environment.[74] The latest clinical practice guidelines suggest twenty minutes cooling with water as soon as possible, as failure to do so can have a detrimental short and long term impact on the burn survivor.[75]

A care pathway is proposed in which a clinical assessment is routinely made to consider whether it is in the best interest of the casualty to have cooling of their burns at the scene.[76] From a burn survivor's perspective, and in view of the BBA guidance on minimum standard of pre-hospital burn care, current practice may potentially expose them to avoidable harm by failing to fully cool burns prior to leaving the incident scene.[77] Immediate on-scene treatment could provide better outcomes for both thermal and chemical burn injuries.[78]

One factor that does promote burn wound progression is vasoconstriction caused by hypothermia. In the immediate aftermath of a fire event casualties are prone to becoming significantly hypothermic despite being sheltered or wrapped in blankets. Cooling the burn clearly increases the risk of casualties becoming hypothermic. FRS crews must make every effort to prevent hypothermia by following the maxim 'cool the burn, warm the patient'.[79] Inappropriate cooling interventions cause rapid heat loss, especially in the young and the old.[80] This can significantly increase the morbidity and mortality of the casualty.[81]

It is proposed that the FRS, in conjunction with Ambulance Trusts and other partners should seek to develop a way to deliver pre-hospital cooling in a safe, controlled manner that maximises the benefits of such an intervention without burn wound progression or further life-threatening deterioration (e.g. hypothermia or infection).[82,83]

The ability to achieve this effectively and independently of the water sources available at the scene is conditional upon achievement of Element 6.

Element 6:   Develop a water strategy for the optimal cooling of burns

Treatment at scene

Reference has already been made to the significant benefit of cooling a burn by the application of water for twenty minutes, as early as possible.[84] The most effective means of applying water for cooling burns and scalds is to use clean potable water, at no less than 12°C and as near to body temperature as possible, applied in the form of running water at 1-1.5 litres per minute.[85,86] Consideration of different scenarios enables workable solutions to be developed.

Optimal water source and means of cooling are available on-site

Most burn and scald injuries occur within the domestic environment.[87] In the UK, mains-delivered water is easily accessible within these settings and is an optimal water source to deliver the initial cooling for thermal and chemical injuries. The versatility of mains-delivered water provides multiple cooling options within a sheltered and controlled environment.

Following a domestic or industrial fire event, the casualty or nearest bystander is the ideal first responder and can be instructed to commence cooling using mains-delivered water as soon as the 999 call is made, which is likely to be at least several minutes before arrival of the FRS. Once on scene, FRS personnel can supervise the cooling intervention. The aim is to cool the burn area and prevent total body heat loss during and after cooling.

Optimal water source or means of cooling are not available on-site

While every effort should be made to use water that is free from contaminants that could cause harm, the lack of a clean water source should not be a barrier to delivering timely and effective burn cooling within 3 hours of injury.[88] Water sources of varying quality may be used for initial burn first aid attempts, including non-potable water in storage tanks.[89,90] If mains-delivered water is not available at the scene, an obvious and readily available option for the FRS is to use water from the fire appliance tank.[91] With careful consideration, pre-planning and training to ensure that the water flow and temperature can be controlled, cooling of the burn could be delivered as close to accepted good practice as possible.

> "Versatility of mains-delivered water provides multiple cooling options within a sheltered and controllable environment."

In extreme circumstances, alternative water sources could be considered in the best interests of the casualty. The key point is that information on the water source used and duration of cooling must be conveyed by the FRS to the ambulance crews and ultimately to the burn service.[92] A sample of the water source should be collected and transported with the casualty in order to gain insight into the microbiological content and guide subsequent antimicrobial therapy.[93] In future, it may be feasible to develop filtration equipment that could reduce or remove the contamination risk from the use of appliance or non-domestic water sources.

Casualty is remote from optimal water source and fire appliance access

In rare circumstances, the fire scene may be remote from mains-delivered water and inaccessible for the fire appliance.[94] Whilst immediate cooling is ideal, this intervention can still be effective if delivered within 3 hours.[95] Therefore, casualties can be extricated to a location where appropriate cooling can be delivered.

A similar approach to adopting a scenario-based water strategy would also be beneficial in the pre-planning of responses to corrosive substance injuries.[96-98]

The FRS advice to "Stop, Drop and Roll" may also expose burn wounds to contaminated surfaces.[99] As a result, all burns are assumed to be contaminated at the scene and are surgically scrubbed to decontaminate them as part of definitive care.

Element 7:   Attend burn and scald only incidents to provide first aid

Treatment at scene

> "Early cooling significantly improves healing times and the likelihood of achieving a scar free outcome."

Specialist burn services see a wider range and higher volume of burn injuries than the FRS encounter. A frequent example being, serious injuries attributed to individuals with flash burns incurred due to using flammable liquids for bonfires and barbecues.[100] As many of these do not have associated property fires, they are typically reported as medical emergencies, and are routed to the Ambulance Service only. As a result, the FRS are not informed, do not attend and have no data relating to these events or the potential to improve community fire safety behaviour.

The most prevalent injuries are scalds from hot liquids.[101,102] The under-five age group are especially vulnerable to this and are more likely to need further surgery and scar therapy throughout their childhood, if cooling to the recommended standard is not achieved.[103] The elderly are more likely to suffer burns from accidents involving baths that are too hot or fire events from which they are unable to escape as quickly as adults or children may do.[104]

Early cooling significantly improves healing times and the likelihood of achieving a scar free outcome and has capacity to reduce the financial, physical, social and emotional burdens and costs.[105-107]

A typical burn or scald is usually not life-threatening and the response time of the Ambulance Service may reflect this lower prioritisation, potentially missing the opportunity to cool the burn in a timely manner.[108,109] In such situations, or when the Ambulance Service is under pressure, the FRS could provide an alternative response in order to deliver appropriate first aid.[110]

The co-ordinated and casualty-centred model adopted for Road Traffic Collisions and, more recently - medical co-responding, may well prove a useful basis on which to further consider how the FRS could work with the Ambulance Service to provide a joint medical response option for those with burn or scald injuries.[111-114]

From the perspective of the burn survivor it is clear they would want, and it is in their best interests, to have the earliest possible assistance.[115] This may not accord with current service provision boundaries but is persuasive when considered from a casualty-centred point of view.[116] In most cases, early cooling has a significant influence on the ability to achieve a pre-event level of physical and emotional recovery, which is the main aspiration of the burns sector.[117]

Element 8:   Communicate circumstances of burn injury to clinical care providers

Scene to surgeon

Understanding the circumstances of a burn injury may be of vital importance to those providing medical interventions whether at the scene, hospital or in a specialist burn service.[118] A range of information, often obvious to the FRS at the scene, could inform better treatment and outcomes if it were provided to the clinical care teams.[119,120] At the very least, there is a knowledge gap in the published literature regarding the circumstances of virtually all fire events apart from those resulting in fatalities and of forensic interest. Understanding the scene, whether the extent or damage caused by the fire, what was burning or the dimensions of the fire environment, may provide valuable opportunities for research into how pre-hospital events may impact morbidity and mortality.

Current FRS procedures for passing information regarding the mechanism of injury typically rely on the provision of verbal information (if asked for) at the point of handover to the Ambulance Service. This lacks reliability for several reasons, including differences in appreciating what information might be most useful, different priorities between the FRS and Ambulance Service, and accumulation of errors as the information is passed between personnel. Based on the experience of current procedures, it is impossible to be confident that the necessary information is routinely captured, assimilated, conveyed and received.[121] It is difficult to know how detrimental this may be for the casualty but may, in some circumstances impact decisions regarding the need for further investigations or the timing of transfer to definitive burn care, with consequential effects on morbidity and mortality.

The toxic products of combustion, especially carbon monoxide and hydrogen cyanide, can be lethal.[122] A casualty known or suspected to have been exposed to toxic gases should be administered CyanoKit™, an antidote to cyanide intoxication, without delay.[123,124] It would be a relatively simple matter for the FRS to relay information about the fire scene and the nature of any casualties at the scene to the Emergency Department or burns service to determine the risk of inhalation injury and cyanide intoxication. With more information available to the receiving Emergency Department or specialist burn service team, it may be that the FRS or Ambulance Service are advised to administer CyanoKit™ at the scene to mitigate the harmful effects of an inhalation injury. This should not be done routinely as it can influence the appearance of the burn. However, with simple changes to current practice the impact on casualty care could be significant.

The West Midlands FRS have been using a co-designed form for several years which captures information about the fire in order to assist the clinical teams.[125] The Burns Extrication Form is emailed from the scene to the receiving ED and burn service, often arriving before the casualty. A similar system could be readily adopted elsewhere. Equally, advances in visual technology offer the ability to further enhance this concept to provide communication and imagery (potentially in real-time) between the scene and place of care. Telemedicine apps are currently being discussed within the burns sector and could be used to ensure the transfer of essential data from scene to burn service.[126,127]

The FRS should liaise with the burns sector to identify what scene information would most assist clinical care teams to enhance their diagnosis, treatment and understanding of burns. The most appropriate method of delivering such information in a timely and secure manner should also be established, ideally as a national standard.

Currently, there is not a designated casualty liaison role within the formal Incident Command System structure. If adopted, this would ensure the best casualty-centred outcome and experience, for fires and other incidents.

> "There is not a designated casualty liaison role within the formal Incident Command System structure."

Element 9:   Assess the influence of FRS actions and terminology on psychosocial recovery

Psychosocial recovery

Mental wellbeing is positioned as an integral and interdependent determinant of physical health. As such, it is recognised as an important subject for society and one which has been increasing in scale and impact.[128] The maintenance of good mental wellbeing is seen as beneficial, whilst poor mental wellbeing is a growing concern for individuals and public services.[129] This can be seen both in terms of demand on services but also as an employee welfare issue.

In recent years there has been a significant investment in promoting the need to safeguard the mental wellbeing of emergency response personnel.[130] This recognises that witnessing or participating in traumatic events can pose psychological risks, both from single incidents or as a cumulative effect.[131-135] In a sector where this exposure can be anticipated as a likely risk, prevention or mitigation initiatives have been introduced to protect personnel.[136,137]

For the public involved in a traumatic emergency event there are similar risks to their mental wellbeing, although the nature of exposure is likely to differ significantly.[138] They are unlikely to have actively prepared for the risk of psychological harm, as emergencies are by their nature usually sudden events occurring without warning.[139] They are also likely to have a personal stake in the impact or outcome of the event.[140] Despite this, there does not appear to be consideration of how to manage the psychological wellbeing of burn survivors or others present.[141,142]

As people recover from the physical effects of a fire there is often an extensive period of psychosocial and emotional recovery.[143] The FRS rarely consider their role in the emotional experience of a burn survivor as it is not something that is always obvious at the time of their intervention.[144] However, the emotional experience of the event and care received, has very long-lasting effects for those concerned and can require significant NHS resources to support and treat.[145,146]

> "The emotional experience of the event and care received, has very long-lasting effects for those concerned and can require significant NHS resources to treat."

As a first principle, it is clear that the FRS should understand whether or how its actions influence the psychological experience of casualties and others exposed to the incident.[147] This would establish whether there are any aspects of the current approach which are detrimental to the burn survivor and others affected by the traumatic event. Equally, it may be that there are opportunities to make changes, which positively enhance the ability of quicker recovery period for casualties of fire and burns.

The FRS should identify what influence its actions, terminology and care have on mental wellbeing of burn survivors or others present.[148,149,150] Using the experience of burn support groups and psychosocial experts, these findings should be used to identify opportunities for the FRS to make a positive contribution towards psychosocial recovery.[151]

Element 10: Introduce a customer reported experience and outcome framework

Customer experience

The primary focus of the Elements 1-9 is to optimise the direct health outcomes for those requiring assistance by avoiding or mitigating the physical or psychological effects of an injury.

Generally, the FRS will assess its interventions against internally generated or national performance measures and compliance with standard operating procedures. These are organisationally useful but are not how the casualty and other parties will experience or recollect the event. Their assessment and memory will have a greater focus on the emotional experience, how they were made to feel and will be closely linked to its personal impact.[152] The importance of this is not yet fully appreciated or reflected in the FRS. As a result, there is an absence of relevant and standardised performance measures which represent the service-user's perspective. This Element relates to all the non-medical features of incidents.

An incident can be considered as having one of four possible simplistic outcomes: 1) both the FRS and customer are satisfied, 2) both are dissatisfied 3) the FRS is satisfied but the customer is not and finally 4) the FRS is not satisfied with its performance, but the customer is satisfied. If the customer perspective is not routinely captured there is the potential for misunderstanding and conflict between how the FRS and others assess its performance.

Ad-hoc feedback via complaints and compliments models do not generate enough data for the FRS to be of value and are unlikely to be understood with a customer mindset. Furthermore, they may not be representative of most customers and may only reflect those motivated by an extremely good or poor experience. There may also be a tendency to assume that no feedback means customers are satisfied. This is unlikely to be true for many reasons but is beyond the scope of this paper to further examine. Without a structured and embedded system to record customer experience at all appropriate points, the FRS can only assess how its service is delivered and not how it is received or its relevance to the customer needs.

Organisations often focus on process and product and assume that improving these will equate to higher customer satisfaction. Many private companies, and public sector organisations, have already recognised that whilst their products and services must be good, that alone is insufficient to ensure relevance, satisfaction or drive engagement. They understand that having good intentions or being well meaning is not a substitute for truly understanding the customer. As a result, there is a growing investment into what is termed 'Customer Experience'.

This has both mindset and methodological dimensions and is a useful approach for the FRS generally and specifically in relation to this proposal. This starts with an understanding of seeing the organisation through the eyes of a customer. Very often the customer will identify issues and improvements that those within an organisation do not notice. This is supported by research which has shown there to be a gap between the FRS and public in terms of the motivations, behaviours and needs.[153] Service development and improvement is then skewed to the FRS perspective and is not reflective of customer input and experience.

> "Seeing the organisation through the eyes of a customer."

Element 10: Introduce a customer reported experience and outcome framework

Customer experience

The burns community has already recognised the importance of structured and routine customer input. An example of this being the patient reported experience measures (PREM) and patient recorded outcome measures (PROM), which are part of the national burn care standards used to inform the commissioning service specification for specialised burn care.[154-156]

> "Having good intentions or being well meaning is not a substitute for truly understanding the customer."

'Customer' is still not a widely used term within the FRS or health services with various other designations used. However, conceptually 'customer' incorporates all these titles (e.g. casualty, service-user, patient, burn survivor) and can be thought of as recognising the legitimate needs and contribution of all those affected by a burn or scald event, whether directly or indirectly.

Good customer experience by design will reduce avoidable distress for those directly or indirectly involved. Well-designed models allow for issues to be identified and put right in the moment. They also anticipate and remove the need for excessive effort by customers. In doing so, they help limit the impact of the event with the further aim of assisting those affected to recover quickly.

As a professional public service, the FRS should ensure the best possible experience by design and through a transparent and demonstrable understanding of customer needs. The adoption of a Customer Experience mindset and methodology would ensure that how the service is received is valued as much as how it is delivered. Concepts such as customer journey mapping and co-creation will help the recommendations within this proposal by aiding better partnership models and involving customers at the service design stage.[157]

Lessons learned

Introduction

The research undertaken for this proposal was characterised by revealing a sense of differences, gaps and fragmentations, between the emergency and healthcare services and their customers. This appears to be due to:

i.   the absence of a collective multi-agency knowledge of the importance and implications of understanding the event from a casualty perspective.

ii. single service/sector approaches to service design and planning which do not provide an end-to-end and full agency view of the casualty experience. This leaves the casualty vulnerable to the impact of individual and cumulative assumptions, variations in knowledge and different aims.

iii. an academic and policy focus on understanding the customer experience of mass casualty or serious emergency events with less attention given to the importance of higher frequency but lower impact incidents.

From a casualty perspective, the experience is often a sum of the parts rather than a cohesive and comprehensive pre-hospital care model. This final section considers why that is the case and how this understanding could be relevant to the emergency services more generally.

Research methodology

"A silo approach to designing, delivering and evaluating services creates an experience and outcome that can only be as good as its weakest part."

This project was purposefully atypical in the way it was developed. It began conceptually in response to the limited strategic dialogue between the burns and FRS communities despite their obvious common involvement in the casualty pathway and care. Methodologically, it adopted the technique of plotting the end-to-end casualty journey and allowing the evidence (where available) to identify their requirements (clinical and non-clinical) along this continuum.[158-160] It was surprising how often this simple change in mindset and methodology revealed insights missed by existing practice and traditional approaches to designing and delivering services.

The current situation of limited cross-service knowledge and dialogue between all stakeholders creates, at worst, the potential to cause harm as well as potentially missing opportunities for achieving a better outcome. Additionally, it can make the experience of a distressing event even worse and more challenging for all involved.

The need for a customer focus

In targeted areas, the government has articulated an expectation that emergency services are better at working together, expressing this through legislation and national improvement schemes.[161-163] The focus of these is on improving inter-agency collaboration including the efficiency and effectiveness of emergency response capability. It achieves this through greater alignment of areas such as operational command, procedures and equipment. Whilst improving the ability to resolve incidents from an operational perspective clearly benefits the public, these initiatives alone are insufficient to optimise their experience and outcome.

Lessons learned

Academic literature conveys how emergencies and other events are experienced by those involved, most often in relation to mass casualty or large-scale events.[164,165] These identify a set of needs and expectations, which are quite different to the necessary, but often functional and task-oriented activities, which response organisations tend to focus on. Without awareness of these issues and appropriate support measures, a range of very real and often long-lasting physical, psychological and social effects can result.[166]

However, within the current collaborative initiatives there is not a corresponding multi-agency agenda to stimulate service improvements based on the public perspective and experience. Isolated guidance documents, typically for mass casualty events, acknowledge the Human Aspects to consider.[167,168] This has some commonality with customer experience but is not the same. Government has begun to recognise the concept and practice of customer experience although to date this has primarily been in administrative and finance functions.[169,170] This follows the path of many commercial (and increasingly public sector) organisations who recognise the value to the organisation, employees and customers of understanding and managing the experience as well as their product or services.[171]

The current picture

Encouragingly, most of the emergency services have, to different degrees, already recognised the importance of what can be referred to generically as a customer experience strategy, initiating their own in-sector vision and programmes. However, these are developing individually and not as part of a cross-service co-ordinated approach. Ironically, this means different priorities, standards and terminology will continue to be experienced by the customer as they traverse through the care of each agency, and a significant improvement opportunity will be lost. Local adaptations of national policies will see further variation, not always justified by the customer needs. Below is an indicative assessment of the position, as identified by national publications, of each of the four primary emergency services in relation to customer experience.

- The NHS has for many years advocated the need to put the patient at the centre of its services. Customer experience methodologies and tools have been adapted for the healthcare environment and the principle of public representation in decision-making bodies is well established.[172-174] There is a strong drive to enable people to take responsibility for their health through technology and initiatives for improving access to information and services.[175-177]

- The Ambulance Service, as part of the NHS, promote a similar vision. It has leadership and strategy committed to delivering patient centred care and involving the public in the service. However, the Ambulance Service does not appear to be as advanced as the wider NHS in the implementation of these aspirations.[178-180]

- The FRS do not appear to have a customer experience strategy, or any plans to promote public representation on decision making forums.[181-183]

- The Police have a unique and potentially more challenging position within the community. Despite this, recognition of the importance of the customer perspective and experience is acknowledged alongside other priorities and seen in initiatives such as those relating to victims of crime and giving communities a voice in setting policing priorities.[184-187]

The above suggests that the current situation will see the individual services develop in different ways at different speeds (or not at all). Emergency service customers will continue to experience fragmented and disconnected services and the potential for avoidable harm will also remain present. A lesson from the private sector is a requirement to have the organisational ability to meet the rapid pace of change in terms of customer expectations. What is innovative and desirable today quickly becomes the norm, and failure to deliver it then causes dissatisfaction and complaints. Customer expectations are rapidly changing and increasing in response to the standards set by the best organisations in any sector and there is less acceptance of agencies which do not measure up. This would suggest the need to put in place mechanisms and structures capable of working across the emergency services in order to support delivery of a consistent and effective customer experience programme.

Better by design

A silo approach to designing, delivering and evaluating services creates an experience and outcome that can only be as good as its weakest part.[188] As a result, unintended consequences, harm or opportunities for improvement can be left unrecognised.[189,190] The experience of conceiving and developing this report identified areas where this was the case. Similar conditions may also exist in other emergency service activity or indeed for any activity or event where multiple agencies or organisations are involved.[191]

One way to mitigate this is by using a transparent and evidence-based approach. There are likely to be variations in the levels of maturity regarding use of evidence and research across the emergency services at national, local and even departmental levels. It is important that an approach is agreed to ensure a common or minimum standard of evidence and to understand where the knowledge gaps are. Alongside this, an appropriate decision-making process should be established. Human factors will also be present and effect partnerships, for example, a range of biases, the influence of hierarchies or power structures and how challenge and different views are managed. Openly discussing and managing the options to address these are beneficial in creating the right environment. This is particularly valuable when working with other organisations where the people, data and ways of working may not be familiar to all parties. Tools such as customer journey maps provide a useful means by which to visibly plot a range of factors all the way through the customer journey across each agency, avoiding the potential for many issues raised in this report.[192,193]

The current fragmented and single service approach to the nascent customer experience agenda risks missing the opportunity to collaboratively create a consistent emergency service customer culture and architecture. The cost of doing so retrospectively when each service has made research, personnel, technology and operational investments and developed its own ways of working will be far greater. Developing a standardised set of customer experience measures would underpin cross sector improvement allowing comparison and meaningful sharing of good practice based on how the service is received throughout the full span of an event by the customer, and not just how efficiently and effectively it is delivered as assessed by the service provider. In that respect the measures would provide a personal assessment by the end user of the relevance and impact of emergency services - something not currently fully known.

There is widespread recognition that the impact and acceptability of innovations such as this is enhanced when they are co-designed with meaningful stakeholder engagement involving all stakeholder groups that have a vested interest.

"From a casualty perspective, the experience is often a sum of the parts rather than a cohesive and comprehensive pre-hospital care model."

Lessons learned

Summary

The theme of differences, gaps and fragmentations, noted during the production of Saving Lives is Not Enough, was seen again in the wider customer experience policies and strategies within the emergency services.

Academic and other evidence sources establish that the way in which public experience, and are impacted by, emergencies and other incidents is very contextual and personal. The requirement for emergency services to meet their statutory and functional roles is not in question. However, fulfilling these alone is insufficient to meet the different needs and vulnerabilities which arise for individuals and communities during and post event.

"The current situation of limited cross-service knowledge and dialogue between all stakeholders creates the potential to cause harm as well as potentially missing opportunities for achieving a better outcome."

Partial recognition of this is provided by the inclusion of human aspects within legislation and guidance pertaining to large scale emergencies, which are fortunately infrequent. It is not clear why the same principles are not factored in to the more routine and small-scale events where they could also have a significant benefit.

Human aspects and customer experience have some areas of overlap but are distinct and serve different functions. Many organisations in the private sector, some government departments, and several public sector bodies have already adopted a customer experience strategy. Within the emergency services there is a mixed picture. The NHS and the Ambulance Service have made clear commitments to being patient centred across all their services and are making the leadership and organisational investment to meet this aspiration. The police use different language and provide a strategic commitment to customer experience within specific activities, but it is arguably less explicitly and distinctly articulated as an overarching priority. The FRS has no discernible plans to introduce a customer experience strategy or enhance public involvement.

Most emergencies and related activities will require a customer to have contact with multiple agencies over varying periods of time. Each service is currently on a different path and proceeding at different speeds in different directions. Against this landscape and direction of travel it will be impossible to design and maintain a co-ordinated, consistent and safe end-to-end journey or outcome for the customers. Individual services may achieve improvements but the opportunity to create an environment which aligns the aims and measures across the entire customer experience will be lost. At this early stage, there is a risk of duplicated investment or not realising the potential for collaborative procurement and development.

Alternatively, there is a timely opportunity to take a different course and create an integrated and coherent model of customer experience within the emergency services, and potentially beyond. In that respect there is a need to provide human services, humanely, and the following recommendations are proposed as a catalyst for this transformation.

Recommendation One: Customer Experience

An integrated customer experience vision, principles and framework should be developed to direct individual and combined emergency service activity. Where applicable, this should also include guidance for other organisations (including private and third sector) which deliver or influence an experience anywhere along the customer journey.

i. The above should be produced in accordance with the customer-focused principles it would seek to promote. The stakeholder engagement strategy should ensure public participation, including co-design principles, throughout the full cycle from creation to evaluation.

ii. It should create a singular and shared language, aim and standard with accompanying customer informed experience and outcome measures.

Recommendation Two: Partnerships

To support the above, partnerships should ensure that they routinely adopt transparent, structured, consistent and evidence-based methodologies for service planning and design. Time and resources to consider and explicitly state the appropriate methods for working and decision-making should be built into all partnership processes.

i. Careful planning is required to design the environment and approach to resolve the complexity of multiple organisational perspectives and needs alongside the pursuit of a common shared aim.

ii. The highly influential role of human factors operating at individual and group levels must also be acknowledged and planned for, both as a function of risk management and to optimise the activity outcome.

Glossary

ADF	Accidental Dwelling Fires
BBA	British Burn Association
FRS	Fire and Rescue Service
NHS	National Health Service
PPE	Personal Protective Equipment
PREM	Patient Reported Experience Measures
PROM	Patient Recorded Outcome Measures

Terms

Term	Definition
999 call	A call made to request the attendance of the emergency services at an incident
Attendance times	The period between receipt of a 999 call and the arrival of the first emergency responder to the incident
Breathing Apparatus	A safety device worn by emergency responders to provide a personal source of breathable air
Casualty	Someone who has suffered any form of harm as a result of an incident
CitizenAID	A charitable scheme providing guidance to the public on how to respond to mass casualty events
Co-creation	A process in which an organisation works in partnership with its customers to design and implement a product or service
Customer experience	The way in which a customer experiences an organisation, product, service or event
Customer-focused	An organisational culture or mindset which focuses on understanding the needs and experience of its customers as a central part of how it does business
Customer journey map	A tool for visualising how a customer experiences a service or interacts with an organisation
"Do No Harm" principle	The principle of actively ensuring that any actions taken to provide help or assistance do not cause harm
Dwelling fires	Fires in residential or domestic properties
Fire Appliance	A vehicle used for firefighting operations
Human Aspects	How an incident impacts on individuals or communities
LIFEBID project	A national study which researched how people responded when faced with a fire in their home
Outcome	The result of an action or incident
Rescue	The act of assisting or removing someone to escape from a place of danger
Rescue Minutes	The period from the arrival of the first FRS resource at an incident to: i) the time when a casualty is found and removed from the premises to a place of safety, or ii) following a full search, the FRS are satisfied there are no survivors in need of assistance
Resuscitation	The act of providing emergency life-saving care
Stakeholder	A person or organisation who provides, influences, is affected by or is the recipient of a service, product or event
Stakeholder engagement	A process of interacting with stakeholders in relation to organisational activities

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"All parties involved should move together, share knowledge, align aspirations and keep the burn survivor experience, needs and outcome as the common focus."

"Each service, each point of contact, each intervention leaves a trace on the burn survivor that will only become evident hours, days or even months later."