Reducing violence and aggression in A&E: Through a better experience

AN IMPACT EVALUATION FOR THE DESIGN COUNCIL

November 2013

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Contents

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Authors and acknowledgements

This report has been written by Frontier Economics, based on research undertaken by ESRO and Frontier Economics.

ESRO was responsible for the primary data that formed a major component of the overall evaluation. ESRO designed the patient and staff surveys and administered the staff surveys, as well as undertaking extensive ethnographic observations and interviews to support and inform findings. ESRO also led the primary data analysis used in this report.

Data collection agency, RED (formerly FieldWorks), administered the patient surveys at Southampton and St George's and provided data entry services. Data entry and tabulations of the staff survey were provided by iDA Consulting Ltd.

Frontier Economics was responsible for undertaking semi-structured management interviews and collecting secondary data, and undertook the secondary data analysis and value for money analysis presented in this report.

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Above all, we would like to thank the NHS Trusts who participated in the project and made this evaluation possible: University Hospital Southampton NHS Foundation Trust; St George's Healthcare NHS Trust; Oxford University Hospitals NHS Trust; and King's College Hospital NHS Foundation Trust, with special thanks to all the A&E staff and patients who dedicated their valuable time to participate in the surveys, and to the various management and security teams who provided key insights to, and secondary data for, our analysis.

Frontier Economics is Europe's leading specialist microeconomics consultancy, applying the highest quality economic analysis to advise clients across some of the most interesting, topical and high-profile issues in the public, private, and third sector. We use cutting-edge techniques and behavioural insights to measure the impact of policies on people and businesses, and make recommendations to improve policy design, based on clear and robust evidence.

ESRO is an award-winning, full-service research agency, specialising in the applied use of cultural and behavioural research to understand clients' problems. Whether conducting focus groups or carrying out interviews, the team uses ethnographic principles to guide its work, going beyond 'what people say' to reveal life as it is truly lived. ESRO's research challenges assumptions and reveals new opportunities, turning complex findings into powerful and actionable insights.

Executive Summary

A&E departments in England dealt with more than 21 million attendances last year.[1] With attendances continuing to increase, A&E departments are under severe strain in the delivery of services.

The pressures on A&E departments can lead to negative experiences for both patients and staff. Patients, who are already feeling vulnerable, can become frustrated and hostilities can easily arise. With A&E staff bearing the brunt of these tensions, well-being in A&E departments can be particularly low.

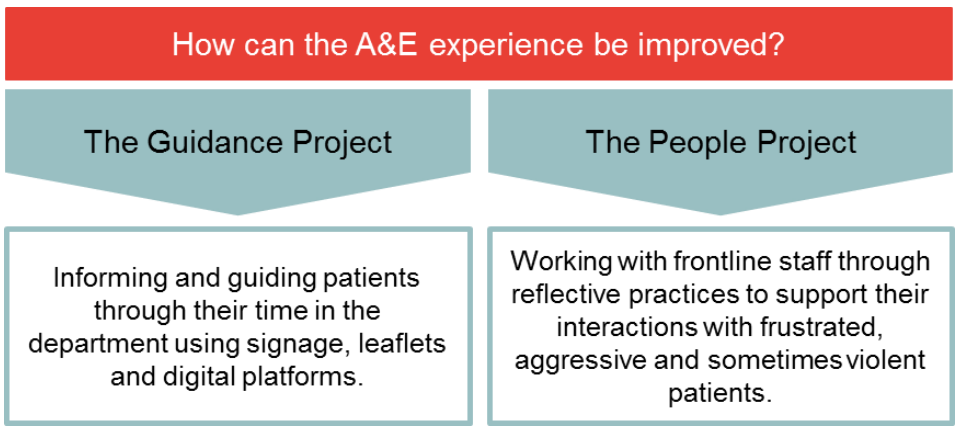
In this context, the Design Council, in collaboration with the Department of Health (DH), has looked at how design can alleviate tensions in A&E departments, with the objective of improving both patient and staff experience and thereby reducing triggers of violence and aggression.

In 2011, a nationwide design Challenge competition called for solutions aimed at tackling violence and aggression in A&E departments through improved patient experience, with an emphasis on understanding how processes and systems could be easily and cost-effectively retrofitted into existing A&Es.

The winning design team, led by PearsonLloyd, worked with the Design Council and three partner NHS Trusts to examine the typical patient journey through A&E, identifying major areas of frustration and potential triggers of violence and aggression. A set of design solutions emerged in the form of the 'Guidance' and 'People' projects, with an online design kit introduced to provide recommendations to NHS Trusts seeking to make improvements within their estates. The toolkit is freely available online at www.AEtoolkit.org.uk.

This impact evaluation and findings report focuses exclusively on the outcomes of the Guidance and People projects, as summarised in **Figure 1** below.

Figure 1. The Guidance and People projects



Source: PearsonLloyd

[11] NHS England (2013) A&E waiting times and activity 2012-13

To understand whether the design solutions would be successful at improving the patient experience and reducing tensions, they were installed and piloted at two A&E departments: Southampton General Hospital (University Hospital Southampton NHS Foundation Trust) and St George's Hospital, London (St George's Healthcare NHS Trust). Comparator control sites, with similar characteristics to the two pilot sites, were also selected for the respective pilot hospitals: Oxford John Radcliffe Hospital (Oxford University Hospitals NHS Trust) as the comparator site for Southampton General; and King's College Hospital, London (King's College Hospital NHS Foundation Trust) as the comparator site for St George's.

To assess the full impact of the design solutions on patient and staff experience, the following **overarching research questions** were identified.

Have the design solutions:

- Improved patients' experiences of A&E?
- Reduced the amount of hostility, aggression and violence experienced by staff and patients?
- Provided good value for money?

To answer these questions, Frontier Economics and ESRO developed a methodology that would robustly test the impact of the design solutions. ESRO designed staff and patient surveys which were conducted prior to the implementation of the design solutions, and again one year later. These were complemented by ethnographic observations undertaken by ESRO. Frontier Economics undertook semi-structured interviews with management and security teams at the Trusts, and also collected a range of secondary information.

The post-implementation data were then compared with the pre-implementation data and against findings from the control Trusts. Frontier Economics developed a cost benefit model to assess the value for money of the design solutions.

Results

This impact evaluation shows that the design solutions have delivered the following key benefits:

- **Improved patients' experiences** of A&E through clarification of the A&E process and improvement of the physical environment, thereby reducing frustration and potential escalation into hostility. This was further emphasised by reductions in complaints relating to communication and patient wait.
- **Reduced non-physical aggression** experienced by both staff and patients, particularly around threatening behaviour. Qualitatively, staff also reported that the People project had positive impacts in catalysing a cultural change for A&E staff, in terms of prioritising and formalising initiatives to learn from and improve staff experience; and empowering staff to challenge aggressive behaviour.
- **Good value for money**: the benefits of the solutions far outweighed their costs by a ratio of 3:1. In other words, for every £1 spent on implementing the design solutions, £3 was generated in benefits.

Executive Summary

Improved patient experience

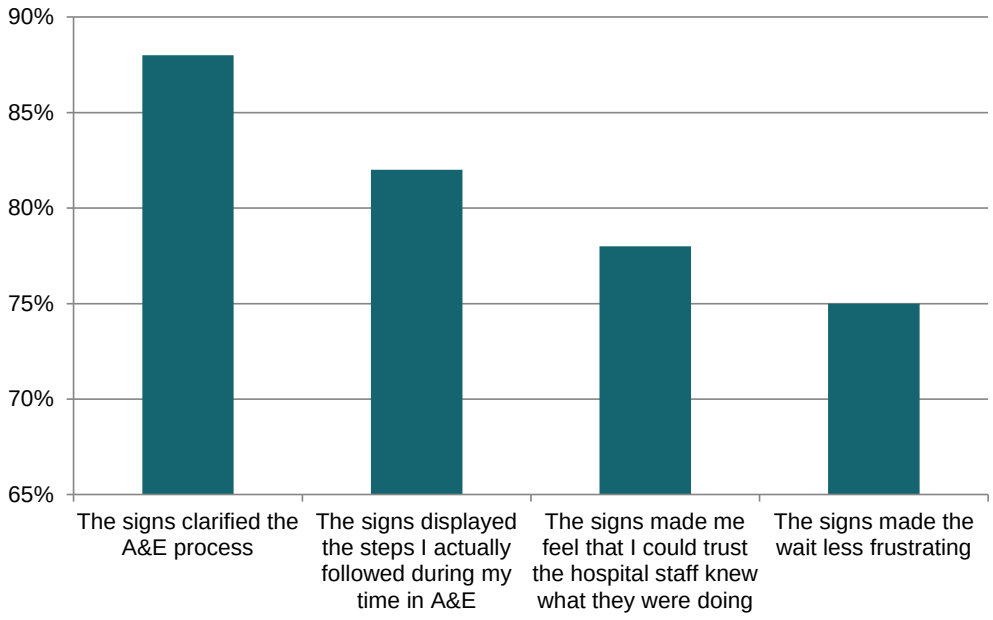
- 88% of patients felt the Guidance project clarified the A&E process[2]
- 75% of patients said that because of the improved signage they found the wait less frustrating[3]
- Complaints regarding poor information and communication with patients fell by 57% after the introduction of the design solutions[4]

> The signs… helped me understand what's going on behind the scenes. They should put these in the A&E where I'm from. It'd stop everyone from kicking off. People seem a bit calmer here.
>
> *– A&E patient*
>
> Source: Patient interview post-implementation (ESRO)

Patients' complaints relating to their 'wait/delay' and to 'poor information and communication' fell by 21% and 57% respectively after the introduction of the design solutions. This marked improvement in patient experience was supported by the patient's survey where patients' perceptions of the A&E process were assessed pre- and post-implementation, with reactions to the design solutions overwhelmingly positive.

Figure 2 below summarises ESRO's survey findings regarding patients' perception of the Guidance project in both pilot sites.

Figure 2. Patients' perception of the Guidance project



Source: ESRO

[2] Primary data sourced from ESRO Staff and Patient A&E Evaluation Surveys 2012-13.

[3] Ibid.

[4] Complaints data taken from the Patient Support Service records at each test site (includes PALS and other formal complaints).

Further, when comparing patient experience before and after implementation of the design solutions, the following was found:

- Only 9% of patients in the post-implementation stage felt they had been forgotten by staff compared with 17% in the pre-implementation stage.
- Only 11% of patients felt that other patients were frustrated post-implementation compared with 16% in the pre-implementation.
- There was a 5% improvement in patients reporting their waiting experience to be 'very good' or 'excellent' (8-10 on a 10 point scale).

In addition to the improvements in patient experience captured by survey data, the number of Patient Advice and Liaison Service (PALS) complaints made by patients relating to communication and waiting time fell dramatically after the introduction of the design solutions. Across both pilot sites, complaints related to communication and information in A&E fell by 57%, from 49 to 21 complaints between April-September 2012 and April-September 2013. While complaints relating to patient wait or delay fell by 21% from 14 complaints to 11 over the same period.[5]

Reduced non-physical aggression

- The impact of the solutions on both hostility and aggression has been significant across a number of measures.
- The largest decreases in aggressive incidents experienced by staff came from a reduction in 'threatening body language or behaviour', which fell by 50%.[6]

The design solutions set out to address non-physical aggressive behaviour – a daily occurrence in A&E. While severe aggressive and violent acts, such as punching and kicking of staff, are extremely detrimental when they occur, the number of reported incidents are notoriously low. Many staff commented that acts of violence and aggression often go unreported due to time pressures and the widely held belief that violence and aggression are an expected occupational hazard. However, the results from the patient and staff surveys in the pilot Trusts showed that since the design solutions were introduced, the acts of non-physical aggressive behaviour fell dramatically, with associated improvements in staff well-being.

Pre- and post-implementation, staff across both pilot sites were asked how many times they were directly subjected to non-physical hostility and aggression according to the four categories below. The impact on incident numbers is shown in **Table 1** on the following page.

[5] These differences are recorded by comparing the number of complaints from April 2012 – September 2012 to the number of complaints in the same period one year later, April 2013 – September 2013.

[6] Primary data sourced from ESRO Staff Survey 2012-13.

Table 1. Impact of design solutions on non-physical aggressive behaviour

Incident type	Percentage fall in incidents
Threatening body language or behaviour (including offensive gestures and unsuccessful physical assault)	-50%
Raised voice or being shouted at (including hostile or aggressive tone)	-25%
Offensive language or swearing	-23%
Uncooperative behaviour	-2%

Note: All results are statistically significant at a 95% confidence interval

Source: ESRO; Frontier Economics analysis

In addition to the reductions in non-physical aggression observed in the staff surveys, the post-implementation interviews with management teams also emphasised the importance of the People project in catalysing cultural change and sustaining a reduction in negative experiences and perceptions of the A&E environment. Although the impacts of the People project are harder to quantify and may take longer to be realised than components of the Guidance project, qualitatively it showed a number of benefits.

In particular, the key messages resulting from the People project were:

- **The importance of prioritising and formalising initiatives to learn from and improve staff experience in order to sustain improved patient experience**: having structured sessions where A&E staff are able to talk about their experiences of violence and aggression in the workplace in a supportive environment.
- **The need to empower staff to challenge unreasonable behaviour**: creating more awareness and encouraging pro-activeness amongst staff that certain behaviour from patients is unacceptable, and should not be assumed as an 'occupational hazard'.
- **A need for staff to take ownership**: opening a dialogue with staff about the cost of, and responsibility for equipment, as a means of reducing potential frustrations and inefficiencies in dealing with a patient without proper equipment to-hand.

Demonstrated good value for money

- The benefits of the solutions outweighed the costs of implementation by a ratio of 3:1, meaning that for every £1 spent on the design solutions, £3 was generated in benefits.
- The greatest cost savings came from reductions in aggressive behaviour.

To assess the social and economic returns associated with the design solutions, a value for money framework was used to compare the benefits of the solutions against their associated costs. The outcome was extremely positive – for every £1 spent on the design solutions, £3 was generated in benefits.

These benefits are not only significant but conservative: the benefits from improvements in patient experience and staff productivity are not accounted for in the VFM framework and with the diminishing marginal effects of aggression assumed to be large, the calculated gains from reducing aggression are conservative.[7]

Conclusions and recommendations

By their very definition, A&E departments are characterised by anxiety and tension. Shifting a long-embedded staff culture and public perception of A&Es as being synonymous with frustration, aggression and violence will not be an easy or quick process, particularly under the increasing operational pressures that A&Es face.

However, the positive results evidenced in this study send a strong message that A&Es who implement these design solutions could see tangible benefits to both patient and staff experience at considerable value for money.

The implemented Guidance project has proved that clear and consistent information about the A&E process, as provided by the environmental signage, helps 'professionalise' the A&E environment and serves to reassure and inform patients, and provide a welcome visual distraction within the waiting process. Environmental signage is a readily implementable design solution that can be tailored and retrofitted in any A&E department, healthcare environment, or other public setting.

The People project was designed in recognition of the importance of creating a culture shift towards mutual respect between patients and staff. Despite the challenges of achieving this kind of cultural shift, its achievement remains essential if sustainable reductions in violence and aggression are to be realised. While it is more difficult to quantify the impacts of the People project, it is clear from the staff management teams interviewed in this evaluation that the emphasis on staff engagement and support facilitated through the People project has helped catalyse a perceptible positive shift in the A&E environment. This should be monitored and built upon to achieve a lasting, longer term impact.

The results presented here are, however, a conservative estimate of the potential benefits which could be realised from design solutions in A&E settings, and it is suggested that a broader, longer-run study be undertaken to capture the potential wider, indirect benefits – such as operational efficiency gains – that were outside the scope of this report.

It is hoped that the findings of this evaluation will strengthen the evidence that cost-effective design solutions and staff engagement can play an important role in improving A&E experience and in helping to prevent the escalation of frustration and non-physical aggression in healthcare settings. It is recommended that other A&Es in England now consider implementing these design solutions to realise similar benefits. Other healthcare or comparable public service providers may also want to consider the application of similar design solutions.

[7] The reasons for this approach to calculating benefits is explained in **Annex 2: The value for money model.**

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1 Introduction

Chapter summary

- A&E departments are inherently complex, high-pressured and unpredictable environments, where incidents of hostility and aggression are particularly prevalent.
- Evidence shows that the physical environment of healthcare facilities – and particularly acute care settings – can have a significant impact on patients' stress levels and behaviour.
- As part of the Department of Health's commitment to reducing violence and aggression in A&E departments, the Department of Health formed a partnership with the Design Council to explore the underlying triggers of violence and aggression in A&E departments and challenge the design industry to develop innovative solutions to help address these triggers and, thereby, reduce levels of aggression.
- The solutions created by the winning design team comprise:
  - a Guidance project: informing and guiding patients through their time in the department, using signage, leaflets and digital platforms; and
  - a People project: working with frontline staff through reflective practices to support their interactions with frustrated, aggressive and sometimes violent patients. These design solutions were implemented at two A&E departments (Southampton General Hospital and St George's Hospital, London).
- This report outlines the design solutions and assesses their impact on: patient experience; hostile, aggressive and violent incidents in A&E departments, and; value for money.

1.1 Background to the study

Hostile and aggressive acts pose potentially significant costs for the NHS in terms of staff absences, lost productivity and additional security. However, it is the physical and psychological damage of such acts and their impact on staff retention that pose the greatest human and financial costs (NAO, 2003; Lehman et al., 1999).

I don't feel supported when incidents do happen. If I get kicked or shouted at, I might get removed from a patient case. But then some other nurse has to go in there and deal with it.

- A&E Staff Nurse

Source: Staff interview pre-implementation (ESRO)

Single acts of harassment can cause distress and ill-health: 14% of NHS staff who are assaulted in the course of their work are estimated to suffer from severe symptoms of post-traumatic stress disorder (Needham et al., 2005) and when these acts occur more frequently, they are strongly associated with severe long-term health problems (Einarsen and Raknes, 1997).

A&E departments present complex, high-pressured and unpredictable environments, in which tensions and frustrations can easily arise and escalate, making A&E staff particularly vulnerable to hostile behaviour. (Design Council, 2011; ESRO, 2011).

There is a growing body of evidence to suggest that the physical environment of healthcare facilities affect patient safety and quality of care (Joseph et al. 2009); and, in particular, that factors such as layout and queue management in acute care settings have a significant impact on stress and aggression (Ulrich et al., 2004; The Lewin Group, 2006).

Inhospitable environments, perceived inefficiencies, and a lack of understanding about process or operational pressures, are all major triggers of hostility and aggression in A&E with patients often feel forgotten about or that their needs are not being attended to (Design Council 2011; ESRO, 2011).

As aggression is often the consequence of accumulating frustrations, improvements in patient experience can not only help reduce tensions and non-physical hostility, but also help prevent their potential escalation into more serious incidents (Morrison et al. 1998).

> I get the impression that I probably shouldn't be here, but nobody will tell me if I should stay or go home. I think it's pretty busy – I don't want to be a pain, but it's just that I've been here for an hour and if I'm going to be seen soon, then I'll probably stay.
>
> *– A&E patient*
>
> Source: Patient interview pre-implementation (ESRO)

The Department of Health and Design Council have partnered to deliver a number of successful innovation programmes in healthcare settings. Recognising the value of a design led approach the Department of Health partnered with the Design Council to deliver *Reducing violence and aggression in A&E: Through a better experience*. This design-led innovation programme, developed and managed by Design Council, sought to uncover design solutions to reduce the human and financial costs of violence and aggression in A&Es.

The Design Council and Department of Health ran a nationwide design Challenge competition, calling for design solutions that would alleviate tensions and hostility in A&E, with an emphasis on improving patient understanding of the A&E process, creating a culture of mutual respect between patients and staff, and reinforcing positive behaviours. Through the provision of well-targeted information and staff-engagement, as well as changes to the sensory environment, the programme aimed to improve patient experience and thereby reduce the levels of hostile and aggressive behaviour in A&E.

The aims of the *Reducing violence and aggression in A&E: Through a better experience* programme are summarised in the box below.

Programme aims

- **Support NHS staff and organisations** to reduce the incidents of violence and aggression towards staff within their communities.
- **Deliver tangible cost savings**, reducing the actual and associated costs of violence and aggression incurred by the NHS.
- **Help bolster staff confidence and satisfaction** by making improvements to healthcare environments and facilities.
- **Help deliver improved patient care** through calmer environments.
- **Generate awareness** to support a culture for NHS staff and patients, focusing on mutual trust and respect.
- **Directly or indirectly reduce incidences of violence and aggression** in A&E departments.

Introduction

The winning multi-disciplinary design team, led by PearsonLloyd, was supported by an independent Advisory Board of key health, education and industry stakeholders. Together they worked closely with three partner NHS Trusts to develop and test a range of design changes. Chesterfield Royal Hospital NHS Foundation Trust, Guy's and St Thomas' NHS Foundation Trust and University Hospital Southampton NHS Foundation Trust were selected as research and co-design partners. These three sites were considered to be broadly representative of A&E departments across the country, and displayed a commitment to reducing violence and aggression within their estates.

The design solutions developed through this programme comprise two components for installation: the 'Guidance project' and the 'People project'. These solutions were subsequently installed in the A&E Departments of Southampton General Hospital (University Hospital Southampton NHS Foundation Trust) and St George's Hospital, London (St George's Healthcare NHS Trust) for testing and formal impact evaluation.

This report outlines the design solutions and assesses their impact in both pilot sites on: patient experience; hostile, aggressive and violent incidents in A&E departments, and; good value for money.

2 The design solutions

Chapter summary

- The Design Council undertook extensive desk-based research and commissioned in-depth ethnographic investigation into the characteristics and triggers of violence and aggression in A&E.
- A multidisciplinary design team, led by PearsonLloyd, developed solutions that aimed to address the identified triggers and help prevent, rather than react to, acts of hostility.
- Over a four-month period, the design team worked closely with three partner NHS Trusts to develop and refine their concepts, to arrive at the following three key outputs:
  - **A Guidance project**: informing and guiding patients through their time in the department, using signage, leaflets and digital platforms.
  - **A People project**: working with frontline staff through reflective practices to support their interactions with frustrated, aggressive and sometimes violent patients.
  - **An online design toolkit**: a series of design-led recommendations to help improve patient experience and reduce violence.
- Following the initial co-design phase, the design team worked with two 'pilot' implementation and evaluation sites – Southampton General Hospital and St George's Hospital, London – to further develop and tailor the Guidance and People projects.
- Both pilot sites installed the Guidance project during Autumn 2012, and the People project in February 2013 at Southampton and in July 2013.

2.1 Preliminary research

Extensive desk-based and ethnographic research was undertaken to uncover common characteristics and triggers of violence and aggression with the identified escalators of violence and aggression grouped into nine separate trigger categories (shown on the next page), to be targeted by the design solutions.

By addressing these triggers, the design team sought to create preventative solutions to violence and aggression, with a focus on improving patient experience through helping patients to better understand the A&E process and by making patient pathways more transparent. With the identified triggers in mind, the design team broke down the typical patient journey into four key stages to create an 'ideal' patient experience (see **Figure 4**) to help inform the eventual design solutions.

Triggers of violence and aggression

Clash of people:
Many areas in A&E departments are crowded with a range of different people, forced together by difficult circumstances – each undergoing their own stresses and dealing with their own complex mix of clinical and non-clinical needs.

Lack of progression:
While all Trusts aim to treat 95 per cent of patients within four hours, waiting for any length of time can be a difficult experience. There are few situations in our lives when we are forced to wait for such lengths of time without any sense of progression.

Inhospitable environments:
Many people describe a dislike of hospitals, not least because they are full of sick people. Beyond the patients, hospitals can be uncomfortable places which are not pleasant to spend time in.

Dehumanising environments:
When arriving at A&E people can feel 'out of sorts' for a large number of reasons. Sometimes the way patients are managed can further lead to a loss of perspective.

Intense emotions:
A&E is a place where people may be experiencing extreme life events, suffering with pain or stress, or having to witness how other people are coping (or not) with their own stressful experiences.

Unsafe environments:
A&E is typically a very busy environment, with considerable amounts of equipment and large numbers of people using the space. Sometimes these factors can help to trigger or worsen violence and aggression.

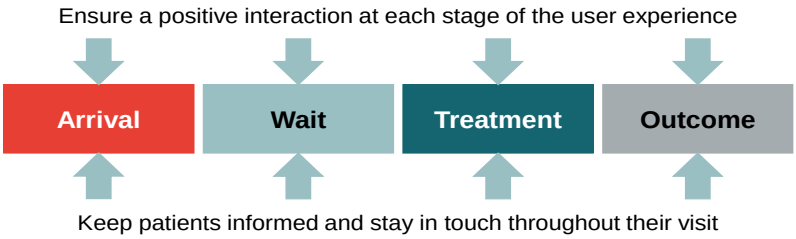
Perceived inefficiency:
From a patient's perspective it can sometimes feel as if staff in A&E environments are disorganised and lacking focus. Patients observe themselves and others seemingly waiting for hours, while staff 'busy themselves' with perceived non-essential tasks.

Inconsistent response:
Hospital environments are often tightly controlled by policies, guidance, rules and regulations, much of which is difficult to decipher, inconsistently applied, and can be contrary to what happens in practice.

Staff fatigue:
Working in an A&E department is highly demanding on staff, many of whom work 12-hour shifts. Over time, staff can become both physically and emotionally tired, struggling to find the energy to deal with the constant flow of patients.

(ESRO, 2011)

Figure 3. Ideal patient journey through A&E



From arrival through to outcome, the design team recognised the importance of interaction and clarity. The concept of an ideal patient experience underpinned the whole design process: emphasis was placed on accessible information and positive engagement throughout the development and testing of the design solutions.

Over a four-month period the design team worked closely with the partner Trusts to research, develop and refine their concepts. After various workshops, interviews, prototypes and testing, the design team arrived at three distinct outputs: the Guidance project, the People project and an online design toolkit.

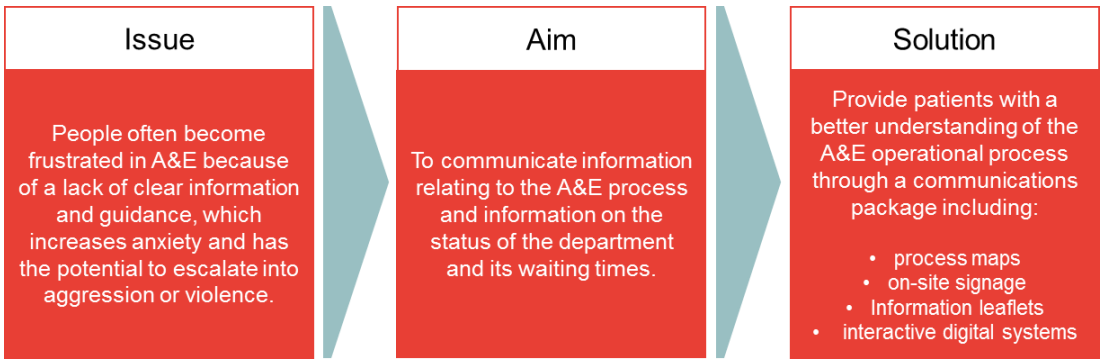
This impact evaluation and findings report focuses exclusively on the Guidance and People projects.

2.2 The Guidance project

The Guidance project comprises a communication package across a range of mediums, principally centred around a process map, retrofittable signage, patient leaflets, and live digital information. The Guidance project provides key information to patients and visitors as they move through the system and thereby reduce many of the associated frustrations and anxieties identified previously as triggers to violence and aggression in A&E.

The Guidance project is summarised in **Figure 4** below.

Figure 4. The Guidance project



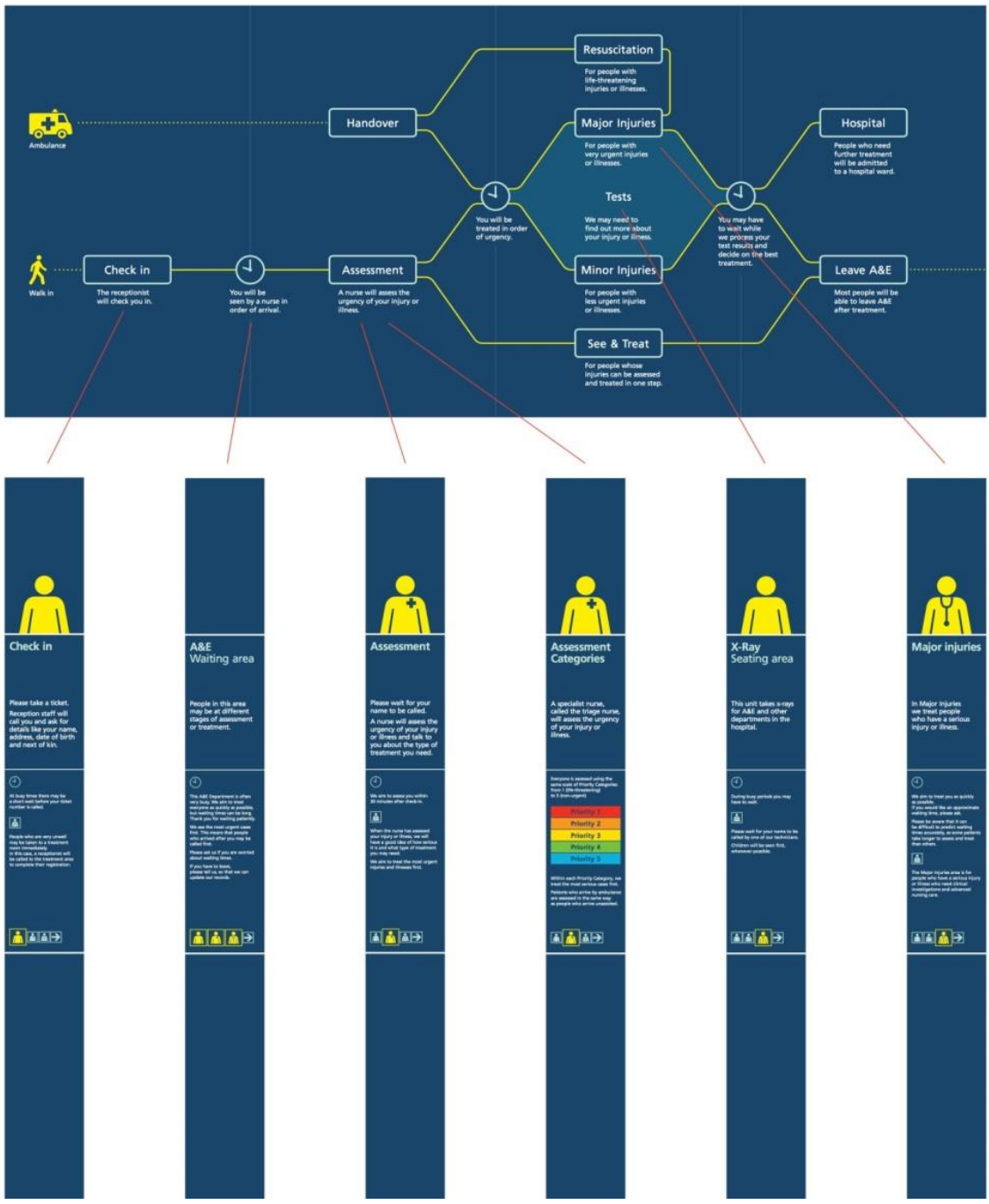
The design team recognised that in order to create a positive experience at every stage of the patient's journey it was essential that users felt informed throughout their visit, reassured about the process and their place within it.

The Guidance project aims to provide visitors with information in an accessible way so that they are less likely to become frustrated or aggressive as they move through the

The design solutions

system. In particular, the Guidance solution is underpinned by an upfront process map placed at the entrance of A&E. The process map enables every patient entering A&E to understand what their journey through A&E might look like, with accompanying 'slices' of signage throughout the process referring back to the relevant section of the map. It is intended that a 'slice' should be present in every area of the department in which a patient might find themselves. An example of the process map and corresponding slices is shown in **Figure 5** below. A clearer image of the map is provided in **Annex 8: Guidance project process map**.

Figure 5. A&E Process map with corresponding 'slices'



Source: Pearson Lloyd

While print information is ideal for communicating department-specific information, a digital information stream is necessary to communicate live changes in the departments and to provide patients with an understanding of the context and operational status of the department. Information, such as the number of patients within each area of the department, can improve patient experience by diminishing anxiety and offering patients a better understanding of the reasons why they may be asked to wait. Screens within the waiting area integrate existing departmental data into a digital information display.

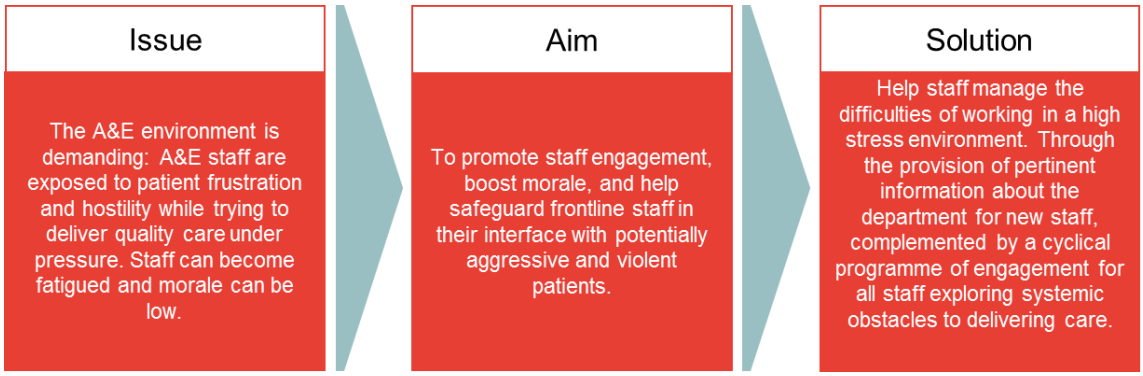
2.3 The People project

The People project aims not only to enhance the A&E department's skillset through training in problem solving, de-escalation and communication, but also to encourage staff to engage in a process of reflection on their own actions and behaviours.

While clear guidance can greatly enhance patient experience, the complexity of A&E means that in many circumstances the best way to assist a patient is through human contact. The People project aims to support staff to maintain high levels of compassion and empathy while working under pressure, as well as to develop the necessary techniques to enable them to best deal with potentially aggressive and violent patients. Staff engagement can have a significant impact on the experiences of patients and visitors to A&E and if staff can encompass the active management of patients' needs beyond clinical aspects then the department can function more efficiently (Design Council 2011).

The People project is summarised in **Figure 6** below.

Figure 6. The People project



2.4 Implementing the design solutions

The design solutions were publicly showcased in November 2011. Two pilot hospitals were identified as the first A&E departments to trial the solutions as part of an impact evaluation. The Guidance and People projects were further developed and refined in collaboration with Southampton General Hospital and St George's Hospital, London, to tailor them for their respective A&E operations.

The design solutions

The pilot sites pre-implementation

In the waiting areas of Southampton General Hospital and St George's Hospital. Patients lacked information and understanding about:

- ***How* patients were being prioritised**, such as why some were seen before others;
- ***What* would happen in terms of process** before / after seeing a doctor or nurse; and
- ***Why* they might be facing a long wait**.

> We've been sitting here for ages. There's no information or anything.
>
> *– A&E patient*
>
> Do you know if we're supposed to come back to the waiting area? I don't want to be in the wrong place and miss my turn.
>
> *– A&E patient*
>
> Source: Patient interviews pre-implementation (ESRO)

In the Southampton waiting area, the walls were almost bare, with existing signage minimal and generally hard to notice. There was little to distract attention, with most people tended to stare anxiously at the reception counter, or watch people approaching the vending machines.

St George's A&E waiting area was more visually engaging than at Southampton: it had recently been painted, and there were new and very visible labels on doors. The waiting area also benefitted from more natural lighting and there were complimentary copies of local newspapers available to read. However, like Southampton, the waiting area had limited signage and particularly lacked clarity around the order of triage and checking-in, with visitors confused about the process.

Source: Ethnographic observations (ESRO)

Both pilot sites implemented the Guidance solution in Autumn 2012. This comprised the upfront process map, a full set of Guidance panels ('slices') for each area of A&E (including triage, xrays, resuscitation, majors, minors etc.), and information leaflets for patients and visitors. However, although both sites intended to display the digitial information systems (TV screens showing information such as patient numbers etc.) as part of the Guidance project, to-date neither site has consistently displayed the digital information as planned.

St George's had screens installed in their waiting area as part of another pre-planned initative – an advertising promotion. This restricted the use of the screens so that it was not possible to integrate the digital information displays within this system. Additionally, the Trust was unable to gain the necessary support from their IT team in order to align the Trust's existing system with the planned solutions. Consequently, it has not been possible to test the digital element of the Guidance project at St George's.

Southampton installed hardware specifically for the project which has since been used intermittently. The main challenge has been in ensuring that electronic patient records are updated in real time, so that the screens display correct information. During the pilot the department tested a number of ways to effectively calibrate the Trust's data with the information displayed on screen in a way that was useful and accessible to patients.

For the People project, each site appointed staff 'facilitators' from their A&E team who undertook 2 days of facilitator training. Each Trust adapted the People project and its schedule to reflect their needs. Consequentlym the content and format of the project was delivered differently at each site.

At St George's, the People project began in March 2013 and ran over four months, until June. In order to create a programme that was manageable within the context of an extremely busy department, the Trust held sessions that were more open and flexible than originally outlined in the design package – both in terms of the number of people attending and the frequency of the sessions. The programme began by discussing staff's personal experiences of workplace violence and aggression. As sessions progressed, staff were able to identify and define typical perpetrators of hostility as well as categorising the nature of incidents, including when incidents were most likely to happen. The tally charts helped to identify which areas of the department were experiencing the highest levels of violent and aggressive incidents, leading to insightful discussions about how these could be better managed.

The People project also began in March 2013 at Southampton, but here regular sessions were held with one group of eight participants, who were chosen to represent a cross section of staff. Again, flexibility was key to ensuring staff participation, with sessions scheduled around staff rotas. However, despite careful planning, staff still found that on occasion they had to stay on after a night shift or come in on off duty days in order to participate.

Over the course of eight sessions, the group explored the issues that caused the most irritation and impacted the ability to deliver care. This led to a number of unexpected findings, and empowered staff to begin conversations with management. Ultimately, the People project provided the Trust with an opportunity to engage with staff, emphasising that their needs were heard and considered important. Southampton also used the People project to open a dialogue about key operational issues affecting staff, as a way of relieving pressure and deflecting some of the challenges they were facing.

Piloting the design solutions within working A&E departments has presented inevitable challenges and provided a host of valuable learnings which will be applied to future implementations. This study has further emphasised the complexity and competing pressures on A&E staff with multiple initiatives and an unpredictable case load. It has also emphasised the need for design solutions to be sufficiently flexible to meet the specific needs of individual A&Es.

The design solutions

3 Evaluation approach and results

Chapter summary

Evaluation approach

- Frontier Economics and ESRO developed a methodology to test the impact of the design solutions. The approach involved collection of primary patient and staff data through immersive methods, secondary A&E data collection, and cost-benefit analysis to reveal the impact of the design solutions.
- Surveys and A&E data were collected before the implementation of the design solutions, and again a year later. The pre- and post-implementation data were then contrasted with each other as well as to comparable A&E departments, where the design solutions were not implemented. This approach has ensured that the reported results only capture effects that relate to the design solutions.
- To assess the value for money of the design solutions, Frontier Economics developed a cost-benefit model to assess the value for money of the project.

Results

- The results of the evaluation show positive impacts across all three research questions, which were identified to assess particular areas of the design solutions. The key findings include:
  - Reported improved patients' experiences of A&E through clarification of the A&E process and improvement of the physical environment, thereby reducing frustration and potential escalation into hostility. This was further emphasised by reductions in complaints relating to communication and patient wait.
  - Reduced non-physical aggression experienced by both staff and patients, particularly around threatening behaviour. Qualitatively, staff reported that the People project had positive impacts in catalysing a cultural change for A&E staff, in terms of prioritising and formalising initiatives to learn from and improve staff experience; and empowering staff to challenge aggressive behaviour.
  - Good value for money: the benefits of the solutions far outweighed their costs by a ratio of 3:1. In other words, for every £1 spent on implementing the design solutions, £3 was generated in benefits.

3.1 Overview of the evaluation approach

To evaluate the impact of the design solutions a set of primary and secondary data were collected to respond to the following research questions. Have the design solutions:

1. Improved patents' experience of A&E?
2. Reduced the amount of hostility, aggression and violence experienced by staff and patients?
3. Provided good value for money?

This data entailed: patient surveys, staff surveys, ethnographic observations (designed and undertaken by ESRO) and management interviews (designed and undertaken by Frontier Economics). **Table 2** below summarises the timescale and sample sizes of the staff and patient surveys. Staff surveys were carried out by ESRO pre-implementation and post-implementation at both pilot sites and at both control sites. Patient surveys were carried out pre-implementation and post-implementation at the two pilot sites only. Ethnographic observations were carried out by ESRO during the administration of the above surveys.

Table 2. Summary of primary data collection - staff and patient surveys

	Sites	Staff survey	Patient survey	Ethnographic observations
Pre-implementation	**Pilot sites (Aug-Sept 2012)**	Sample size: 120 across both sites 3 x 9-hour shifts per site	Sample size: 593 across both sites 14 x 6-hour shifts per site	✓
	Control sites (Sept and Dec 2012)	Sample size: 93 across both sites 1 x 6-hour shift per site	**X**	✓
Post-implementation	**Pilot sites (July 2013)**	Sample size: 143 across both sites 3 x 9-hour shifts per site	Sample size: 553 across both sites 3 x 9-hour shifts per site	✓
	Control sites (July 2013)	Sample size: 107 across both sites 1 x 6-hour shift per site	**X**	✓

Source: ESRO and Frontier Economics

To assess the value for money component of the study, Frontier Economics collected secondary data from both the pilot and control sites. This covered a range of management information including data of monthly A&E attendances, staff numbers, information on PALS complaints, as well as violence and aggression / DATIX records, covering a period of one year prior to and one year following the implementation of the design solutions (from August 2011 to August 2013). In addition to this, Frontier Economics also collected information from the pilot sites regarding the costs of the design solutions: product (e.g. costs of physical signage and screens), installation, and maintenance. Full details of the management information collected are provided in **Annex 6: Management interviews and secondary data collection**.

To ensure the results were robust, primary staff data and secondary management data were taken from the control sites: Oxford John Radcliffe was the control site for

Southampton General Hospital, and King's College Hospital was the control for St George's Hospital.[8]

The data collected pre- and post-implementation at the pilot sites was then compared with the control sites' data to account for any comparable trends. This data was also fed into the Value for Money Framework developed by Frontier Economics.

For full details for the evaluation approach, see **Annex 1: Evaluation approach**. For full details on the value for money methodology, see **Annex 2: The value for money model**.

3.2 Results

The results of this evaluation show that the design solutions have delivered the following key impacts:

- **Improved patients' experiences** of A&E through clarification of the A&E process and improvement of the physical environment: 88% of patients surveyed felt the Guidance project clarified the A&E process, while 75% of patients said that because of the improved signage they found the wait less frustrating. This was further emphasised by reductions in complaints relating to communication and patient wait.
- **Reduced non-physical aggression** experienced by both staff and patients, with the largest decreases in aggressive incidents experienced by staff coming from a reduction in 'threatening body language and aggressive behaviour', which fell by 50%. Qualitatively, staff also reported that the People project had positive impacts in catalysing a cultural change for A&E staff, in terms of prioritising and formalising initiatives to learn from and improve staff experience; and empowering staff to challenge aggressive behaviour.
- **Good value for money**: the benefits of the solutions far outweighed their costs by a ratio of 3:1. In other words, for every £1 spent on the design solutions, £3 was generated in benefits.

Patient experience

Patients were asked about their experiences throughout the key aspects of their journey in A&E, from arrival through to departure. By comparing data of patients' experiences pre- and post- implementation, a direct comparison between each site was made.

The results presented below show the average change across both Trusts by combining the outcomes of the patients' surveys in both pilot sites. The key outcomes from this analysis are shown below.

- **Satisfaction with overall experience** rose post-implementation, with a 5% increase in patients'

'I'm waiting for my mother in law. We're all very worried…. but I think it's helpful to have the information. It suggests they understand a bit more about what you might need to know. You feel very 'out of it' sitting out here, they definitely help'

– Visitor, Waiting Room

Source: Visitor interview post-implementation (ESRO)

[8] ESRO conducted staff surveys at the control sites during the same period as the pilot sites although with a smaller sample size. Frontier Economics collected key secondary data from the control sites during the same period.

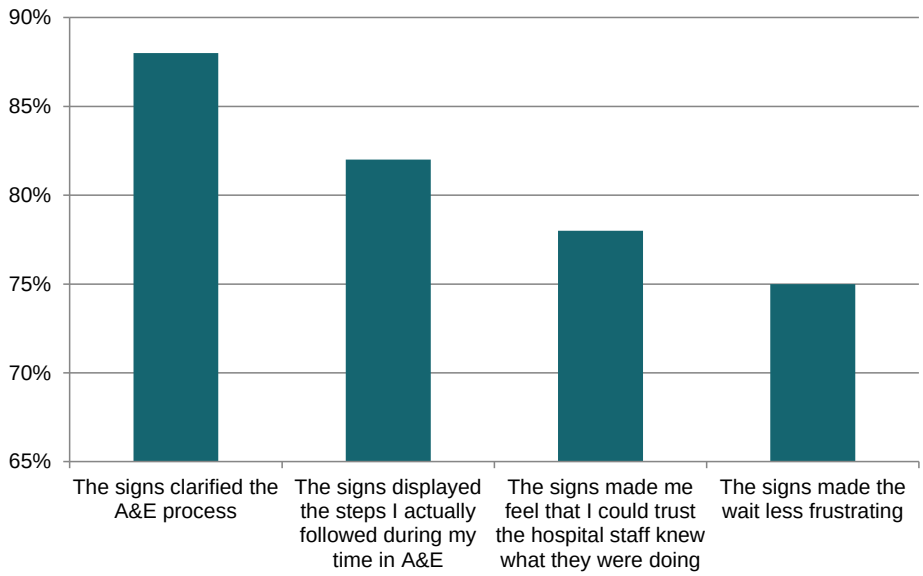
reporting their general experiences to be 'very good' or 'excellent' (8-10 on a 10-point scale).

- **Patient satisfaction** improved with key aspects of their visit, including perceived staff efficiency.
- **Satisfaction with waiting times improved overall** with the percentage of patients' rating their waiting experience as 'poor' (1-4 on a 10-point scale) falling 8%, while those reporting their experience to be 'very good' or 'excellent' (8-10 on a 10-point scale) increased by 5%.
- **Patients' perception of department efficiency improved** with 77% of patients reporting department efficiency to be 'very good' or 'excellent' post-implementation, as opposed to 66% pre-implementation.
- **Emotions and atmosphere** in the departments were reported to have improved across both sites, with a 5% drop in patients reporting observed frustration or anxiety in other patients.
- **Patients' understanding of the A&E process improved** post-implementation, with 73% of patients reporting they had understood the A&E process 'very well' (8-10 on a 10-point scale) after the design solutions were introduced, in comparison to 62% before implementation.

> It's quite a strange environment and everything looks the same…I sometimes feel a bit stressed that I'm in the wrong place. At least the signs help you know you're in the right area.
>
> *– A&E patient, waiting for X-ray*
>
> Source: Patient interview post-implementation (ESRO)

In addition to the findings above, patients' reactions to the Guidance project were overwhelmingly positive, particularly regarding the usefulness of information. 88% of patients reported that the Guidance project clarified the A&E process while 75% of patients said that the new signs made the wait less frustrating. These and other results on patient perception of the Guidance project are shown in **Figure 7** below.

Figure 7. Patients' perception of the Guidance project



Source: ESRO

Evaluation approach and results

When you work here for a long time you forget how strange the environment is to patients. It's easy to get annoyed when people don't understand things. The signs are clear and easy to read, they definitely help.

– Nurse, Minor Treatment Area

Source: Staff interview post –implementation (ESRO)

While staff quickly became used to the presence of the signage, they felt it served as an important reminder that patients are not always familiar with A&E processes as well as proving useful in helping staff explain the A&E process to patients. Both staff and patients commented that the signage had 'professionalised' the A&E departments.

Patient complaints

The Patient Support Service records formal complaints made by patients regarding their care.[9] In addition to the improvements in patient experience captured by survey data, the number of complaints relating to communication and waiting time fell dramatically after the introduction of the design solutions. Across both pilot sites, complaints related to communication and information in A&E fell by 57%, from 49 to 21 complaints between April-September 2012 and April-September 2013. Complaints relating to patient wait or delay fell by 21% from 14 complaints to 11 over the same period.[10] With the Guidance and People projects targeted at improving information and communication between staff and patients and easing patient waiting times, the solutions have markedly improved patient experience and reduced complaints.

Violent and aggressive behaviour

While severe acts of aggression and violence can be extremely detrimental, the number of reported incidents of major aggression and violence were low in both the pre- and post-implementation data. Research conducted by the *Reducing violence and aggression in A&E: Through a better experience* programme highlighted the frequency of non-physical aggression. Acknowledging that hostility and aggression are often pre-cursors to violence, the design briefs and solutions intentionally focused on reducing non-physical aggression. This approach has maximised the potential for design while respecting the need for complementary approaches of policing and security to maintain staff safety and respond to violent incidents. This focus on frustration and aggression is mirrored in the results of the impact evaluation, which has demonstrated a 50% reduction in aggression and hostility as a result of the design solutions.

Both patients and staff reported significant reductions in acts of non-physical aggressive behaviour after the design solutions were introduced.

Prior to implementation, 4% of patients across the pilot hospitals reported witnessing aggression or hostility involving a member of staff. This fell to only 2% post-implementation, showing a significant drop in reported aggression of 50%.[11] Reported reductions in aggression and hostility from patients were supported

The signs have gone down really well and have worked even better than we expected… levels of frustration are reducing and I witness fewer and fewer angry incidents.

– Senior staff member

Source: Staff interview post-implementation (ESRO)

[9] Includes PALS and other formal complaints.

[10] These differences are recorded by comparing the number of complaints from April 2012 – September 2012 to the number of complaints in the same period one year later, April 2013 – September 2013.

[11] Note: this data does not account for any changes in hostility and aggression in the control sites as patient surveys were limited to the pilot sites.

by similar reductions in non-physical aggression reported by the staff survey.

Pre- and post-implementation, staff were asked how many times they were directly subjected to non-physical aggression according to four categories of aggressive behaviour. Reductions were recorded in all categories of non-physical aggression across the pilot sites but were particularly significant in 'threatening body language or behaviour', which fell by 50% across the test sites.

The observed reductions in non-physical hostile and aggressive behaviour are shown in **Table 3**, with differences between the pilot and control sites controlled for to eliminate bias.

In addition to reductions in aggression and hostility, staff reported improvements in working environment and department efficiency post-implementation of 11% and 5% respectively. Furthermore, 46% of staff felt that the Guidance signage had a positive impact, while over half of the staff interviewed felt that the design solutions had improved patient understanding of what to expect during their time in the A&E. A summary of the impact of the design solutions on non-physical aggression is shown in **Table 3** below.

Table 3. Impact of design solutions on non-physical aggressive behaviour

Incident type	Percentage fall in incidents
Threatening body language or behaviour (including offensive gestures and unsuccessful physical assault)	-50%
Raised voice or being shouted at (including hostile or aggressive tone)	-25%
Offensive language or swearing	-23%
Uncooperative behaviour	-2%

Note: All results are statistically significant at a 95% confidence interval

Source: ESRO; Frontier Economics analysis

The People project

This evaluation has looked at the impact of the overall package of design solutions and cannot attribute certain impacts to individual components of the solutions. However, achieving the kind of cultural shift that the People project aims is likely to take time and will not provide the same immediate, quantifiable benefits as seen with the Guidance project. Allowing for the delivery of subsequent rounds of the People project and monitoring and evaluating its impacts over a longer period may further enrich the results reported here.

Qualitatively, however, there were positive responses from staff, and particularly from management teams, about the significance of the People project in catalysing the type of cultural shift fundamental to achieving a sustainable reduction in violence and aggression and improved staff experience in A&Es.

In particular the key messages resulting from the People project were:

Evaluation approach and results

- **The importance of prioritising and formalising initiatives to learn from and improve staff experience, in order to sustain improved patient experience.** Having structured sessions where A&E staff are able to talk about their experiences of violence and aggression in the workplace in a supportive environment. Management interviewed post-implementation remarked on a culture in A&Es of staff not talking about their feelings and experiences, and that the People project presented "hard data" (in terms of volume of violent or aggressive incidents recorded on the tally chart and through discussion). This helped to identify perpetrators of violence and aggression, and to reflect on the impact of, as well as to develop strategies to deal with, these incidents.
- **The need to empower staff to challenge unreasonable behaviour.** The management teams interviewed post-implementation reported that, anecdotally, they have observed more awareness and pro-activeness amongst staff that certain behaviour from patients is unacceptable.
- **A need for staff to take ownership**. Senior management explained how at the outset of the project there were staff complaints about equipment going missing. Dealing with a patient and then realising that you did not have the right equipment was not only frustrating and unprofessional, but in turn aggravated any potential patient frustration. The People project was used as an opportunity to open a dialogue about the cost of and responsibility for equipment, and this resulted in giving responsibility for equipment to specific staff members. Since then, less equipment has gone missing, which is an indirect – and unexpected – benefit of the People project.

As noted in **Section 2.4**, each pilot site adapted the People project and contents and schedule to reflect their respective needs, emphasising the need for this part of the programme to be flexible and tailored to individual A&Es. Although learning about ways to further develop or adapt the design solutions themselves is not part of this evaluation, the flexibility of the People project and how it was adapted at the two pilot sites emphasises the potential of the project as a tool to identify specific issues for individual A&Es, and to work through the most suitable ways to address them.

3.3 Value for money

The design solutions have reduced hostility and aggression, but it is only by comparing these benefits with the costs of implementing and maintaining the solutions that their value for money can be assessed.

To assess the social and economic returns associated with the design solutions, a value for money framework was used. A detailed description of the methodology and a list of the associated costs of aggressive acts are provided respectively in **Annex 2: The value for money model** and **Annex 3: Consequences of violence, aggression and hostility**.

3:1
Benefit:Cost ratio

By comparing the monetised benefits of the design solutions with their costs across both Trusts, the value for money of the design solutions was determined, with the benefits outweighing the costs **3:1**. Therefore, for every £1 spent on the design solutions, £3 was generated in benefits and as such, installing the design solutions represents considerable value for money. However, these benefits are conservative: the diminishing marginal effects of aggression are assumed to be large and the benefits measured are limited to their impact on causing a psychological stress disorder, as outlined further in **Annex 2: The value for money model**.

With the VFM solely measuring the reductions in incidence of psychological stress disorders from reduced aggression, the potential benefits of improvements in patient experience and staff productivity are not accounted for in the VFM framework.[12] Therefore, the gains included in the VFM are a conservative estimate of the benefits from reduced aggression, with the improvements in staff wellbeing and patient experienced captured by the surveys not incorporated in the VFM analysis.

[12] The reasons for this are discussed in **Annex 2: The value for money model.**

4 Conclusions and recommendations

Chapter summary

Conclusions

- This study evidences that cost-effective design solutions can play an important role in improving patient experience and preventing the escalation of frustration and non-physical aggression in healthcare settings.
- Clear and consistent information about the A&E process, as provided by the Guidance project component of these design solutions, helps 'professionalise' A&Es and serves to reassure and inform patients, as well as provide a welcome visual distraction within the waiting process. It also acts as a reminder to staff that patients need to be kept informed about processes to prevent them getting anxious or frustrated.
- In particular, environmental signage is a relatively low cost and readily implementable design solution that can be tailored and retrofitted in to any A&E department or other healthcare environment.
- The People project component of these design solutions has shown that positive, formalised and regular staff engagement and support, is fundamental to catalysing a cultural change in A&E settings to empower staff and emphasise that violence and aggression is unacceptable.

Recommendations

- It is suggested that a broader longer-run study be undertaken to capture the potential wider, indirect benefits – such as operational efficiency gains – that were outside the scope of this study.
- Other A&Es in England should now consider implementing these design solutions to realise similar benefits.
- Other healthcare or comparable public service providers may also want to consider the application of similar design solutions.

A&E departments are inherently pressurised environments, where patients feel vulnerable, and are prone to becoming anxious and frustrated. This can be worsened when patients do not have a clear understanding of the A&E process or sufficient information to refer to or distract them. For frontline A&E staff trying to deliver quality care in this environment, dealing with patient hostility often becomes an assumed occupational hazard.

Evidence that the physical environment of healthcare facilities – and particularly acute care settings – can have a significant impact on patients' stress levels and potential for hostile behaviour, presented an important opportunity to the Design Council and Department of Health to reduce the prevalence of violence and aggression in A&E departments through improving the environment and experience for both patients and staff, while trying to catalyse a shift in a long-embedded staff and patient culture through better staff engagement and support.

The *Reducing violence and aggression in A&E: Through a better experience* programme aimed to deliver cost-effective and retrofittable design solutions that would improve the A&E patient experience through creating a calmer and more informative environment (and thereby help prevent frustrations escalating into acts of violence or aggression). At the same time, the programme needed to generate a better awareness of the pressures on A&Es, and support and bolster the confidence and well-being of A&E staff in dealing with challenging situations.

Through extensive background research and stakeholder engagement to understand triggers of violence and aggression and map the ideal patient journey through A&E, the design team developed the Guidance project – focused on informing and guiding patients through their time in the department, using signage, leaflets and digital platforms; and the People project – focused on working with frontline staff through reflective practices to support their interactions with frustrated, aggressive and sometimes violent patients.

This impact evaluation set out to assess the impact and associated value for money of the resulting design solutions at two A&E departments using a combination of robust evidence drawn from primary and secondary data. The impact evaluation focused on whether the solutions had: improved patient experience; reduced levels of staff and patient experience of hostility; and provided good value for money. The findings presented in this report show clear evidence that the design solutions have had positive results in all three of these areas.

In particular, some of the most positive results from the patient surveys were focused around the environmental signage of the Guidance project. Both quantitatively and qualitatively, patients demonstrated that clear and consistent information about the A&E process, as provided by the environmental signage helped 'professionalise' A&Es and served to reassure and inform patients, as well as provide a welcome visual distraction within the waiting process. Staff at the pilot sites also reported that, while they themselves soon got used to the signage, it did help 'streamline' and improve the appearance of the A&E, and acted as a reminder to them that patients need to be informed about processes to prevent them getting anxious or frustrated.

It is also notable that, for the pilot sites, the signage proved to be the most straightforward and readily implementable component of the design solution package. Importantly, this type of signage could be tailored and retrofitted in any A&E department or other healthcare environment and even beyond into other public settings.

The People project was designed in recognition of the importance of creating a culture shift towards mutual respect between patients and staff. Despite the challenges and long-term nature of achieving this kind of cultural shift, maintaining a focus on this goal remains essential if sustainable reductions in violence and aggression are to be realised. While it is more difficult to quantify the impacts of the People project, and this study has highlighted that it may need to be adapted for different A&Es, it is clear from the staff management teams interviewed in this evaluation that the emphasis on staff engagement and support facilitated through the People project have helped catalyse a perceptible positive shift in the A&E environment. This should be monitored and built upon to achieve a lasting, longer term impact.

The overall results presented here are a conservative estimate of the potential benefits which could be realised from design solutions in A&Es, and it is suggested that a broader and longer-run study be undertaken to capture the potential wider, indirect benefits – such as operational efficiency gains – that were outside the scope of this study.

Conclusions and recommendations

It is hoped that the findings of this evaluation will strengthen the evidence that cost-effective design solutions and positive staff engagement can play an important role in improving the A&E experience and in helping prevent non-physical aggression in healthcare settings and beyond. The positive results evidenced in this study send a strong message that A&Es who implement these design solutions could see tangible benefits to both patient and staff experience at a relatively low investment cost.

It is recommended that other A&Es in England will now consider implementing these design solutions to realise similar benefits. Additionally, other healthcare or comparable public service providers may also want to consider the application of similar design solutions to improve the experience of both users and providers in public-service settings.

Annex 1: Evaluation approach

The starting point of the evaluation was to develop a clear set of overarching research questions against which to assess the overall impact of the design solutions and their value for money.

Research questions

Have the design solutions:

- Improved patients' experiences of A&E?
- Reduced the amount of hostility, aggression and violence experienced by staff and patients?
- Provided good value for money?

The pilots and control sites

The design solutions were implemented at two A&E departments (the 'pilot' sites): Southampton General Hospital (University Hospital Southampton HNS Foundation Trust) and at St George's Hospital, London (St George's Healthcare NHS Trust).

In addition, 'control' sites – A&E departments with similar characteristics to their respective pilot sites – were selected to control for potential changes caused by variables common to both the test and control trusts (changes in the control can be interpreted as changes the pilot sites would have experienced had they not implemented the design changes, and vice versa).

Control sites were chosen based on their similarities with the pilot sites in key areas. Oxford John Radcliffe Hospital (Oxford University Hospitals NHS Trust) was selected as the control site for Southampton General; and King's College Hospital, London (King's College Hospital NHS Foundation Trust) was selected as the control for St George's.

The key comparator characteristics of the pilot and control hospitals are shown in **Table 4**.

Table 4. Key comparator characteristics of the pilot and control A&Es

	PILOT: Southampton General	***CONTROL: Oxford John Radcliffe***	**PILOT: St George's, London**	***CONTROL: King's College, London***
Type	General Acute Hospital	General Acute Hospital	General Acute Hospital	General Acute Hospital
Size of Department (A&E patients 2012)	123,616	127,993	163,405	152,056
Waiting times 2012 (% 4 hours or less)	94%	93%	96%	95%
Distance to central business district (miles)	2.1	4.1	10.0	6.1

Source: DCLG (2010), NHS (2011)

Data collection

A combination of primary, secondary, and qualitative data was collected to assess the design solutions. The research questions and corresponding data collection methods are summarised in **Table 5** below.

Table 5. Data collected

Research Question	Patient surveys	Staff surveys	Ethnographic observations	Management interviews / secondary data
1) Have patients' experiences improved?	✓		✓	
2a) Have patients experienced less hostility, aggression and violence?	✓		✓	
2b) Have staff experienced less hostility, aggression and violence?		✓	✓	✓
3) Have the design changes provided good value for money?		✓		✓

Source: ESRO and Frontier Economics

ESRO carried out pre-implementation surveys of patients and staff at both the pilot sites and control sites just before the implementation of the design solutions, in Summer 2012, and again one year later in Summer 2013. The times and days of the week over which survey data were collected were the same pre-implementation and post-implementation to ensure that conditions were consistent.

At the pilot sites and control sites ESRO also undertook ethnographic research in order to understand the impact of the design solutions on the experiences, attitudes and behaviour of patients and staff. This involved collecting baseline (pre-) and post-implementation data on:

- Patient experience, attitudes and behaviour; and
- Staff experience, attitudes and behaviour.[13]

A summary of the timings and sample sizes of staff and patient surveys conducted by ESRO is provided in the table below.

[13] Patient and staff surveys were conducted at the pilot sites; only staff surveys were collected at the control sites.

Table 6. Summary of primary data collection - staff and patient surveys

	Sites	Staff survey	Patient survey	Ethnographic observations
Pre-implementation	**Pilot sites (Aug-Sept 2012)**	Sample size: 120 across both sites 3 x 9-hour shifts per site	Sample size: 593 across both sites 14 x 6-hour shifts per site	✓
	Control sites (Sept 2012; Dec 2012)	Sample size: 93 across both sites 1 x 6-hour shift per site	X	✓
Post-implementation	**Pilot sites (July 2013)**	Sample size: 143 across both sites 3 x 9-hour shifts per site	Sample size: 553 across both sites 3 x 9-hour shifts per site	✓
	Control sites (July 2013)	Sample size: 107 across both sites 1 x 6-hour shift per site	X	✓

Source: ESRO and Frontier Economics

Frontier Economics conducted pre-implementation 'management' interviews with key members of A&E operations at both the pilot sites and control sites before the implementation, to understand the operational environment of A&Es, and to establish what information could be used for the value for money assessment – for example, what and how security information was recorded. One year after the implementation Frontier Economics conducted interviews with the same key staff members (only at the pilot sites), and collected secondary data from all the sites (pilots and controls) for a period covering one year before to one year after the implementation.[14]

The post-implementation results were then compared with the pre-implementation results. Any universal trends – for example, a reduction in incidents of hostility experienced by staff over the same period – were controlled for by comparing the results of the pilot sites with those of their respective controls.

Patient data

Prior to the implementation of the design solutions, an 8 minute survey, focusing on patient experience, was conducted over a two week period in order to establish a baseline upon which the results of the solutions could be compared. The survey was repeated at the same locations approximately one year after the design solutions were introduced to avoid seasonal factors affecting results. Patient sample sizes varied

[14] For full details on the management information collected, see **Annex 6: Management interviews and secondary data collection**.

Annex 1: Evaluation approach

slightly, with 593 respondents surveyed pre-implementation period and 553 post-implementation, which would not affect results.

Patient survey

The patient survey incorporated key aspects of the patients' journey throughout their visit. The issues covered included:

- Satisfaction with overall experience
- Satisfaction with various aspects of the visit
- Understanding of various aspects of the visit
- Information – clarity and usefulness
- Emotions and atmosphere
- Incidents of hostility involving a staff member.

Copies of the pre- and post-implementation patient surveys used at the pilot sites can be found in **Annex 4: Patient surveys**.

Staff data

A 10-12 minute staff survey was conducted prior to implementation over a 3 day period at both the test and control sites. Surveys were distributed during peak weekend and weeknight periods in order to reach the highest number of staff members.

The staff survey was repeated approximately 8 months following implementation of the design solutions, during shifts and times identical to the pre-implementation survey. There were similar levels of responses pre- and post-implementation in the pilot sites, with 120 and 143 responses respectively.[15]

Staff survey

The staff survey focused on staffs' perceptions of violence and aggression and patient experiences in A&E, as well as staff's observed use of the design solutions by patients and staff. Specifically, the staff survey focused on staffs':

- Experiences of violence and aggression
- Views on how well the department copes with and manages incidents
- Feedback on the impact of the Guidance and People projects (post-implementation survey only).

Copies of the pre- and post-implementation staff surveys used at the pilot and control sites can be found in **Annex 5: Staff surveys**.

[15] Staff surveys were collected at the control sites, King's College Hospital and Oxford John Radcliffe, over a one day period only. These sample sizes were 93 at pre-implementation and 107 at post-implementation.

Ethnographic studies

To complement the staff survey an in-depth interaction and ethnographic study of staff was conducted in the pilot A&E departments. This first hand, ethnographic study took place alongside distribution of the staff surveys at both the pilot and control sites. ESRO researchers monitored activity and behaviour in the departments by sitting behind the reception counter, visiting staff and unobtrusively observing at key entry and exit points in the departments. A topic guide outlining the protocols and objectives for observing patient and waiting room behaviour is provided in **Annex 7: Topic guide for ethnographic study**.

Management interviews

Additionally, Frontier Economics conducted pre-implementation interviews with key members of the A&E and security staff at both of the pilot and control sites. This was useful to gain a solid understanding of the challenges faced by the respective A&Es relating specifically to incidents of violence and aggression as well as to staff and patient experiences. This helped the research team to understand the wider internal and external policy context of the hospitals from a managerial and operational perspective and meant the evaluators were aware of any exceptional circumstances that could have distorted the evaluation results.

In collaboration with representatives from all four sites, a set of secondary data was agreed for collection at both the pilot and control sites that included attendance figures, staff numbers and security reports on violence and aggression.

It was agreed that post-implementation interviews would only be undertaken with teams from the pilot sites. These interviews would be built around a semi-structured questionnaire to complement the staff and patient surveys conducted by ESRO. The template for the semi-structured questionnaire, as well as the list of secondary data collected from the pilot sites and control sites, can be found in **Annex 6: Management interviews and secondary data collection.**

Annex 1: Evaluation approach

Annex 2: The value for money model

The costs and benefits associated with the design changes were calculated and compared in order to assess their value for money. Cost benefit analysis (CBA) is the most widely used technique for appraising government policy options and as such, is applied in this instance (HMT, 2003).

Cost-benefit analysis

- Cost-benefit analyses are frequently used to assess whether investments provide value for money and can be justified.
- By comparing the expected benefits and costs of a project, CBA can help predict whether the benefits of the programme outweigh its costs, and by how much.
- Using discount rates to provide present values of expected future benefits and costs, CBA can measure the positive or negative consequences of the project over its lifetime (HMT, 2003).

Programme costs

Table 7 below provides a breakdown of the costs involved in implementing the design solutions, which were delivered through two distinct outputs in the Guidance and People projects.

Table 7. Overview of expected 'average' implementation costs

	Costs
Project Planning	£7,000
Guidance project	
Development	£12,500
Implementation	£20,000
People Project	
Development	£5,500
Implementation	£11,000
Expenses	£4,000
	Total £60,000

Source: PearsonLloyd

The costs in **Table 7** represent the expected costs of installing the design solution package in an average A&E department in England. Inevitably, each A&E might choose to further adapt or enhance the solutions, resulting in an adjusted higher or lower cost.

For the purposes of the VFM assessment, we have used the costs for the pilot trusts to measure the costs of implementation in the first year. The figures presented in **Table 7** are not specific to either pilot site but are the expected costs for an 'average' A&E site. These were very similar to the costs of implementing the design solutions in both A&E

test departments in the first year. Actual implementation costs at the two pilot sites were £65,000 (Southampton) and £61,000 (St George's).

Guidance project costs

The Guidance project is the more costly element of the solutions in the first year, with the production and implementation of the panels, leaflets and visual displays equating to approximately £20,000. Further, development time is required to tailor the Guidance to the specifics of each site, with these modifications costing approximately £12,500.

In future years development costs are assumed to be zero, as the design and customisation of the solutions is completed within the first year. Costs in subsequent years associated with the implementation of the solutions vary depending on the lifespan of each solution. The cost of the solutions when introduced or replaced and their associated lifespan are shown below.

Table 8. Average Guidance costs and lifespan

Equipment	Lifespan (years)	Cost (£)
Signage	2	£15,000
Digital equipment (indicator of activity)	3	£2,000
Leaflets	1	£3,000

Source: Pearson Lloyd and Frontier Economics

People project costs

The People project is estimated to cost £16,500 within the first year, excluding staff time required for training. This comprises the development of the induction pack and the two-day facilitator training programme (required for someone from the Trust to run the project) costing approximately £5,500, and implementation of the project costing approximately £11,000. In future years, the costs for the People project are expected to be greater than Guidance project costs, with this change driven by an increase in staff participation in training. While the development costs associated with the customisation and design of the People project are assumed to be zero in future years, staff participation is expected to be far greater, with all A&E staff assumed to undertake training in full every 6 months. This is a conservative estimate that is in line with the design team's desired training.[16]

Programme benefits

This section explains the potential benefits associated with the programme and their means of valuation. The major benefits from the introduction of the design solutions are:

1. Reduced aggression
2. Increased staff wellbeing

[16] Trainings will be 1-2 hours per week over an 8 week program, and repeated twice a year.

Annex 2: The value for money model

3. Improved patient experience
4. Increased productivity

Reduced aggression

Using the probabilities of an aggressive act leading to acute stress disorder, mild/moderate Post Traumatic Stress Disorder (PTSD) or severe PTSD, it is possible to obtain a monetary cost for an 'average' aggressive act on a member of the A&E staff.

By calculating the value of an aggressive incident and applying this to the reported data on changes in non-physical aggressive acts (pre- to post- implementation), a monetary value for the reductions in aggressive behaviour can be calculated.

To determine the psychological costs of aggressive acts, the World Health Organisation's 'Global Burden of Disease study' (2004) provides Disability Adjusted Life Years and average durations for each incident. This time-based disability measure combines years of life lost due to time lived in states of less than full health with the condition's expected duration to provide an estimated percentage reduction in quality of life. This is monetised by comparing the reduction in quality of life with the economic value of one year of quality life, or one quality life year (QALY).

Quality Adjusted Life Year (QALY)

A Quality Adjusted Life Year is an index of health-related quality of life. Full health equates to 1 on the index, with all health states inferior to full health assigned a score between 0 and 1, with 0 representing death.

Each health profile has an associated QALY loss, with the QALY loss from developing an acute stress disorder calculated as 0.13, for example.

To convert a QALY weighting into a monetary value, a value for a year of full health needs to be identified. As no definitive exchange rate exists, this paper uses the widely cited value from the National Institute for Clinical Excellence (NICE) of £30,000 for one full quality year of life.

Table 9 shows the QALY losses (QALY weight multiplied by duration) for each health outcome commonly associated with aggressive acts in A&E.

Table 9. Cost of potential outcomes of an aggressive act

Disorder	QALY loss	Duration (years)	Discounted duration (years)	Discounted expected QALY loss
Acute stress disorder	0.130	0.077	0.077	0.010
Mild/moderate PTSD	0.130	3.000	2.899	0.377
Severe PTSD	0.510	3.000	2.899	1.478

Source: WHO (2004)

The values in **Table 9** are calculated irrespective of probability of occurrence. In order to assign a value to the probability of the consequences of an 'average' aggressive act, both the likelihood and duration of injury are identified.

The probabilities of an aggressive incident leading to acute stress disorder, mild/moderate post-traumatic stress disorder (PTSD) or severe PTSD are calculated by the Home Office (2005) report. When these probabilities are combined with the duration and disability weightings in the Global Burden of Disease study (2004) an average value for the psychological damage from an aggressive act can be calculated. These probabilities are shown in **Table 10** below:

Table 10. Probability of an aggressive incident leading to a psychological disorder

Psychological health state	Probability of aggression leading to disorder
Acute Stress Disorder	0.1346
Mild/moderate PTSD	0.0029
Severe PTSD	0.0022

Source: Home Office (2005)

The information in **Table 7** shows the probabilities of a single aggressive act leading to the above health states. To provide a conservative estimate, when aggressive acts are repeated the impact on the victim is assumed to diminish. However, the magnitude of this effect is unknown and further in-depth analyses of the experience and functioning of medical professionals is required to provide a more thorough understanding of resilience in the profession and the impacts of aggression over time.

In order to account for the diminished impact of repeated aggressive incidents, this report assumes a non-linear functional form to produce very conservative estimates on the diminishing marginal effects of aggression[17]. Under this assumption, the second and third aggressive acts assumed to have 33% of the impact of the first act, the fourth

[17] Specifically, this is defined as 1/Z. where Z represents the number of aggressive incidents and the time over which they have elapsed.

Annex 2: The value for money model

and fifth aggressive acts 20% of the first act, and all subsequent acts 8% of the impact of first act of aggression.

Improvements in patient experience, staff wellbeing and productivity

Indicators of improvements in patient experience, staff wellbeing and productivity among A&E staff have been captured by the patient and staff surveys as well as the PALS records. Yet these improvements have not been incorporated into the value for money framework, largely because any improvements in staff and patient wellbeing may overlap with reductions in aggression. As we are valuing the benefits of reduced aggression, calculated by comparing the change in reported incidents pre- and post-implementation, any measurement that captures improvements in staff or patient wellbeing risks overlapping with the benefits calculated from reduced aggression. As such, it is impossible to record both reduced aggressive acts and improvements in wellbeing without potential double-counting.

Other potential benefits, such as reductions in stress-related absences, increased staff turnover and changes in litigation costs, were not included in the VFM assessment as they cannot be reliably measured due to the short time span that has elapsed since implementation.

Annex 2: The value for money model

Annex 3: Consequences of violence, aggression and hostility

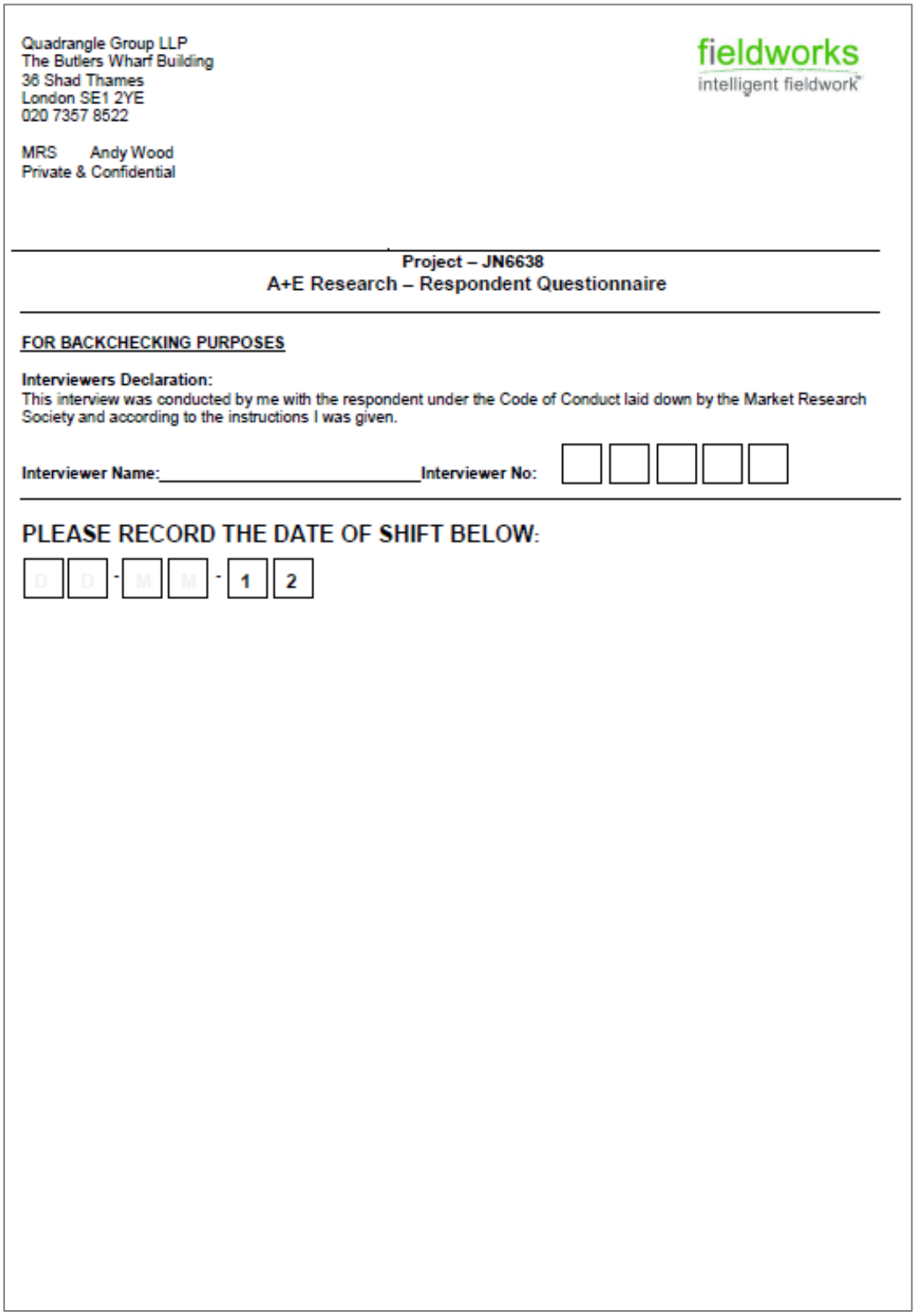
A number of probable costs associated with aggressive and hostile behaviour have been considered:

- psychological health consequences
- stress related absences
- increased staff turnover
- productivity loss
- increased treatment times due to time spent dealing with non-clinical issues
- potential litigation costs
- reduction in staff wellbeing
- reduction in patient wellbeing.

While it is preferable to consider all potential costs and benefits in appraisal analyses, this is not feasible due to double counting and issues regarding measuring the above costs. As a result, this appraisal places a conservative estimate on the value of the design solutions by focusing on the direct consequences of aggression.

Annex 4: Patient surveys

Pre-implementation survey



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020 7357 8522

fieldworks
intelligent fieldwork

MRS Andy Wood
Private & Confidential

Project – JN6638

A+E Research – Respondent Questionnaire

FOR BACKCHECKING PURPOSES

Interviewers Declaration:
This interview was conducted by me with the respondent under the Code of Conduct laid down by the Market Research Society and according to the instructions I was given.

Interviewer Name:_____ **Interviewer No:** ☐☐☐☐☐

PLEASE RECORD THE DATE OF SHIFT BELOW:

D D - M M - 1 2

Good afternoon / evening, my name is ..... I'm from a company called FieldWorks, an independent market research agency based in London. We are conducting some research today on behalf of Southampton General Hospital / St George's Hospital, it will only take 5 - 7 minutes to complete, would you be interested in answering a couple of questions about your experience today.....

Q1 Can I just confirm, are you just leaving the Emergency Department today?

	QS1
Yes	1
No	CLOSE

Q2 And have you been a patient, or parent / guardian of a patient, here at the Emergency Department today?

	Q2
Yes, I was the patient	1
Yes, I came with my child or a child I am responsible for (under 18)	2
I accompanied a friend or relative (over 18)	CLOSE
No, neither	CLOSE

Q3 ....and may I ask your age?
[If respondent is uncomfortable to give exact age]
Q3....could I then ask, which of the following age brackets you fit into?
PLEASE AIM TO RECRUIT A MIX OF AGES WITHIN EACH GROUP

EXACT AGE (AS MANY AS POSSIBLE) _____

	Q3
Under 16	CLOSE
16 – 20	2
21 – 24	3
25 – 29	4
30 – 34	5
35 – 39	6
40 – 44	7
45 – 49	8
50 – 54	9
55 – 59	10
60 +	11

Q4 DO NOT READ OUT.....Please record the respondent's gender

	Q4
Male	1
Female	2

Q5 On a scale of 1 to 10, how severe would you say your / the patient's illness or injury was/is?
Please use a scale where 1 is 'Not Very Severe' and 10 is 'Very Severe'....

Not Very Severe									Very Severe	DK/ NA
1	2	3	4	5	6	7	8	9	10	11

JN6638 A+E Research - Respondent Questionnaire

Annex 4: Patient surveys

Q6 Have you been treated in the A+E department today?

	Q6
Yes	1
No	2

Q7 How satisfied were you with your overall experience in the Emergency Department today?
Please rate your satisfaction on the scale of 1 to 10, where 1 is 'Not at all Satisfied' and 10 is 'Very Satisfied'…

Not at all Satisfied									Very Satisfied	DK/ NA
1	2	3	4	5	6	7	8	9	10	11

Q8 How long did you spend in the Emergency Department today?

H H hours : M M minutes

Q9 How long did you spend **waiting** in the Emergency Department today?
(Please include all instances of waiting, not just the first instance)

H H hours : M M minutes

Q10 How would you rate the following aspects of your visit to the Emergency Department?
Please rate using our scale of 1 to 10, where 1 is 'Poor' and 10 is 'Excellent'….

Q10	Poor									Excellent	DK/ NA
a. Waiting Times	1	2	3	4	5	6	7	8	9	10	11
b. Efficiency of the department	1	2	3	4	5	6	7	8	9	10	11
c. Professionalism of Staff	1	2	3	4	5	6	7	8	9	10	11
d. Empathy of staff	1	2	3	4	5	6	7	8	9	10	11
e. Overall atmosphere	1	2	3	4	5	6	7	8	9	10	11

Q11 At any point during your time in the Emergency Department did you feel that staff had forgotten about you?

	Q11
Yes	1
No	2

JN6538 A+E Research - Respondent Questionnaire

Q12 How well did you understand the following aspects of your visit to the Emergency Department today? Please rate on our scale of 1 to 10 where 1 is 'Poorly Understood' and 10 is 'Well Understood'…

Q12	Poorly Understood									Well Understood	DK/ NA
a. The overall process	1	2	3	4	5	6	7	8	9	10	11
b. The reasons for any waits or delays	1	2	3	4	5	6	7	8	9	10	11
c. The reason why you needed specific tests or treatments	1	2	3	4	5	6	7	8	9	10	11
d. The total time it would take to be seen	1	2	3	4	5	6	7	8	9	10	11
e. The process for making a complaint	1	2	3	4	5	6	7	8	9	10	11

Q13 If you wanted a friend or family member to come find you in the department during your visit, how easy do you think it would have been to describe to them how to find you?

	Q13
Very Easy	1
Easy Enough	2
Quite Difficult	3
Very Difficult	4
Don't Know	5

Q14 Did you read any of the information (signs or posters) displayed in the Emergency Department during your visit today?

	Q14
Yes	1
No	2

ASK ONLY THOSE WHO HAVE CODED YES (CODE 1) AT Q14. ALL OTHERS SKIP TO Q17

Q15 On the whole, how clear was the information (signs or posters) displayed in the Emergency Department during your visit today?

	Q15
Very Clear	1
Quite Clear	2
Not Very Clear	3
Very Unclear	4
Don't Know	5

ASK ONLY THOSE WHO HAVE CODED YES (CODE 1) AT Q14

Q16 Overall, how useful do you think the information signs or posters were to you? Please rate on a scale of 1 to 10, where 1 is 'Not Very Useful' and 10 is 'Very Useful'....

Not very Useful									Very Useful	DK/ NA
1	2	3	4	5	6	7	8	9	10	11

JN6638 A+E Research - Respondent Questionnaire

Annex 4: Patient surveys

ASK ALL

Q17 At any point during your time in the Emergency Department did you feel any of the following emotions?
PLEASE ENSURE EITHER A CODE OF YES OR NO FOR EACH EMOTION

	Q17	
	YES	NO
Frustrated	1	2
Comfortable	1	2
Stressed	1	2
Calm	1	2
Confused	1	2
Reassured	1	2
Anxious	1	2

Q18 To what extent would you agree or disagree with the following statements describing people in the Emergency Department today….

Q18	Strongly agree	Agree	Neither	Disagree	Strongly Disagree
People seemed generally relaxed…	1	2	3	4	5
People seemed confident about their treatment…	1	2	3	4	5
People seemed generally frustrated…	1	2	3	4	5
People seemed stressed and anxious….	1	2	3	4	5

Q19 Did you observe (or were you personally involved in) any grievance or hostility involving a staff member in the Emergency Department today?

	Q19
Yes	1
No	2

ONLY ASK THOSE WHO HAVE CODED 'YES' (CODE 1) AT Q19. ALL OTHERS SKIP TO Q21.
Q20 If yes, how well do you think any complaints, issues, grievances or hostility were handled by the staff in the Emergency Department?

	Q20
Very Well	1
Well	2
Poorly	3
Very Poorly	4
Don't Know	5

Thank you for your time, I just have two last questions for validation purposes….

Q21 What was your approximate time of arrival at the Emergency Department today….

H H : M M

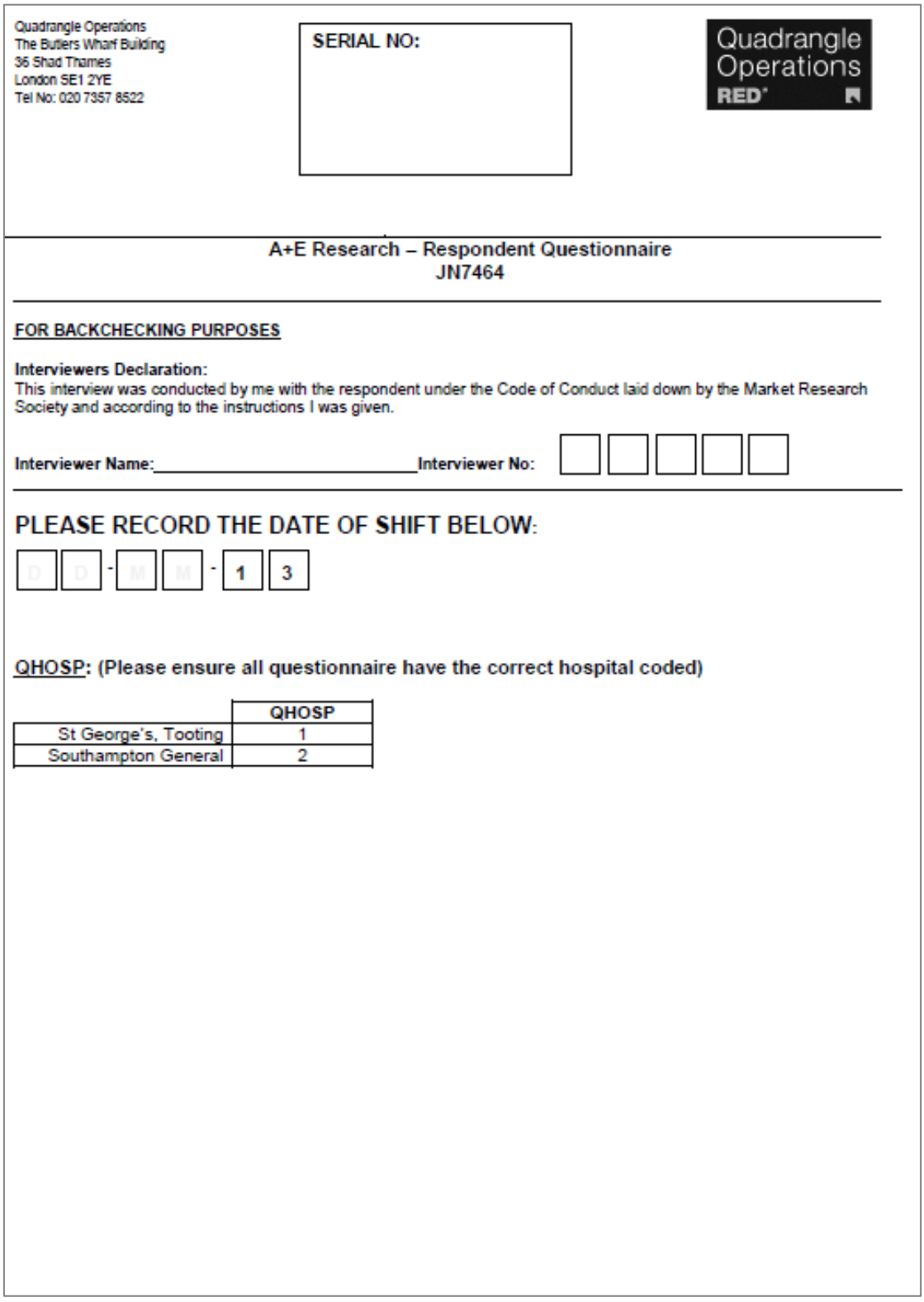
Q22 And lastly may we take your date of birth….

D D M M Y Y

Thank you for time today….

JN5638 A+E Research - Respondent Questionnaire

Post-implementation survey



Quadrangle Operations
The Butlers Wharf Building
36 Shad Thames
London SE1 2YE
Tel No: 020 7357 8522

SERIAL NO:

Quadrangle Operations RED

A+E Research – Respondent Questionnaire
JN7464

FOR BACKCHECKING PURPOSES

Interviewers Declaration:
This interview was conducted by me with the respondent under the Code of Conduct laid down by the Market Research Society and according to the instructions I was given.

Interviewer Name:_____ Interviewer No: | | | | | |

PLEASE RECORD THE DATE OF SHIFT BELOW:

D	D	-	M	M	-	1	3

QHOSP: (Please ensure all questionnaire have the correct hospital coded)

	QHOSP
St George's, Tooting	1
Southampton General	2

Annex 4: Patient surveys

Good afternoon / evening, my name is …….. I'm from a company called Quadrangle Operations, an independent market research agency based in London. We are conducting some research today on behalf of Southampton General Hospital / St George's Hospital, it will only take 5 - 7 minutes to complete, would you be interested in answering a couple of questions about your experience today…..

Q1 Can I just confirm, are you just leaving the Emergency Department today?

	QS1
Yes	1
No	CLOSE

Q2 And have you been a patient, or parent / guardian of a patient, here at the Emergency Department today?

	Q2
Yes, I was the patient	1
Yes, I came with my child or a child I am responsible for (under 18)	2
I accompanied a friend or relative (over 18)	CLOSE
No, neither	CLOSE

Q3 ….and may I ask your age?
[If respondent is uncomfortable to give exact age]
Q3….could I then ask, which of the following age brackets you fit into?
PLEASE AIM TO RECRUIT A MIX OF AGES WITHIN EACH GROUP

EXACT AGE (AS MANY AS POSSIBLE) _____

	Q3
Under 16	CLOSE
16 – 20	2
21 – 24	3
25 – 29	4
30 – 34	5
35 – 39	6
40 – 44	7
45 – 49	8
50 – 54	9
55 – 59	10
60 +	11

Q4 DO NOT READ OUT…..Please record the respondent's gender

	Q4
Male	1
Female	2

Q5 On a scale of 1 to 10, how severe would you say your / the patient's illness or injury was/is?
Please use a scale where 1 is 'Not Very Severe' and 10 is 'Very Severe'….

Not Very Severe									Very Severe	DK/ NA
1	2	3	4	5	6	7	8	9	10	11

JN7464 A+E Research - Respondent Questionnaire

Q6 Have you been treated in the A+E department today?

	Q6
Yes	1
No	2

Q7 How satisfied were you with your overall experience in the Emergency Department today?
Please rate your satisfaction on the scale of 1 to 10, where 1 is 'Not at all Satisfied' and 10 is 'Very Satisfied'...

Not at all Satisfied									Very Satisfied	DK/ NA
1	2	3	4	5	6	7	8	9	10	11

Q8 How long did you spend in the Emergency Department today?

H H hours : M M minutes

Q9 How long did you spend **waiting** in the Emergency Department today?
(Please include all instances of waiting, not just the first instance)

H H hours : M M minutes

Q10 How would you rate the following aspects of your visit to the Emergency Department?
Please rate using our scale of 1 to 10, where 1 is 'Poor' and 10 is 'Excellent'....

Q10	Poor									Excellent	DK/ NA
a. Waiting Times	1	2	3	4	5	6	7	8	9	10	11
b. Efficiency of the department	1	2	3	4	5	6	7	8	9	10	11
c. Professionalism of Staff	1	2	3	4	5	6	7	8	9	10	11
d. Empathy of staff	1	2	3	4	5	6	7	8	9	10	11
e. Overall atmosphere	1	2	3	4	5	6	7	8	9	10	11

Q11 At any point during your time in the Emergency Department did you feel that staff had forgotten about you?

	Q11
Yes	1
No	2

JN7464 A+E Research - Respondent Questionnaire

Annex 4: Patient surveys

Q12 How well did you understand the following aspects of your visit to the Emergency Department today?
Please rate on our scale of 1 to 10 where 1 is 'Poorly Understood' and 10 is 'Well Understood'…

Q12	Poorly Understood									Well Understood	DK/ NA
a. The overall process	1	2	3	4	5	6	7	8	9	10	11
b. The reasons for any waits or delays	1	2	3	4	5	6	7	8	9	10	11
c. The reason why you needed specific tests or treatments	1	2	3	4	5	6	7	8	9	10	11
d. The total time it would take to be seen	1	2	3	4	5	6	7	8	9	10	11
e. The process for making a complaint	1	2	3	4	5	6	7	8	9	10	11

Q13 If you wanted a friend or family member to come find you in the department during your visit, how easy do you think it would have been to describe to them how to find you?

	Q13
Very Easy	1
Easy Enough	2
Quite Difficult	3
Very Difficult	4
Don't Know	5

INTERVIEWER NOTE: Q14 – Q16 ARE TO BE UNPROMPTED ABOUT SIGNAGE
Q14 Did you read any of the information (signs or posters) displayed in the Emergency Department during your visit today?

	Q14
Yes	1
No	2

ASK ONLY THOSE WHO HAVE CODED YES (CODE 1) AT Q14 - ALL OTHERS SKIP TO Q17
Q15 On the whole, how clear was the information (signs or posters) displayed in the Emergency Department during your visit today?

	Q15
Very Clear	1
Quite Clear	2
Not Very Clear	3
Very Unclear	4
Don't Know	5

ASK ONLY THOSE WHO HAVE CODED YES (CODE 1) AT Q14 – ALL OTHERS SKIP TO Q17
Q16 Overall, how useful do you think the information signs or posters were to you?
Please rate on a scale of 1 to 10, where 1 is 'Not Very Useful' and 10 is 'Very Useful'….

Not very Useful									Very Useful	DK/ NA
1	2	3	4	5	6	7	8	9	10	11

JN7464 A+E Research - Respondent Questionnaire

INTERVIEWER NOTE: Q23 – Q24 ARE TO BE PROMPTED QUESTIONS ABOUT SIGNAGE
SHOW SIGN / POSTER IMAGES TO ENSURE RESPONDENT IDENTIFIES 'DESIGN SOLUTION' IMAGES
Q23 Did you notice information panels or signs that look like **these**?

	Q23
Yes	1
No	2
Don't Know / NA	3

ASK ONLY THOSE WHO HAVE CODED YES (CODE 1) AT Q23. ALL OTHERS SKIP TO Q17 BELOW
Q24 To what extent would you agree or disagree with the following statements….

Q24	Strongly agree	Agree	Don't know/NA	Disagree	Strongly Disagree
a. The signs clarified the A&E process…	1	2	3	4	5
b. The signs confirmed what staff were telling me would happen during my time in A&E…	1	2	3	4	5
c. The signs displayed the steps I *actually* followed during my time in A&E..	1	2	3	4	5
d. The signs made me feel that I could trust that the hospital staff know what they're doing	1	2	3	4	5
e. The signs made the wait less frustrating because I understood how the A&E works	1	2	3	4	5

ASK ALL
Q17 At any point during your time in the Emergency Department did you feel any of the following emotions?
PLEASE ENSURE EITHER A CODE OF YES OR NO FOR EACH EMOTION

	Q17	
	YES	NO
Frustrated	1	2
Comfortable	1	2
Stressed	1	2
Calm	1	2
Confused	1	2
Reassured	1	2
Anxious	1	2

JN7464 A+E Research - Respondent Questionnaire

Annex 4: Patient surveys

Q18 To what extent would you agree or disagree with the following statements describing people in the Emergency Department today….

Q18	Strongly agree	Agree	Don't know/NA	Disagree	Strongly Disagree
a. People seemed generally relaxed…	1	2	3	4	5
b. People seemed confident about their treatment…	1	2	3	4	5
c. People seemed generally frustrated…	1	2	3	4	5
d. People seemed stressed and anxious….	1	2	3	4	5

Q19 Did you observe (or were you personally involved in) any grievance or hostility involving a staff member in the Emergency Department today?

	Q19
Yes	1
No	2

ONLY ASK THOSE WHO HAVE CODED 'YES' (CODE 1) AT Q21. ALL OTHERS SKIP TO Q23.
Q20 If yes, how well do you think any complaints, issues, grievances or hostility were handled by the staff in the Emergency Department?

	Q20
Very Well	1
Well	2
Poorly	3
Very Poorly	4
Don't Know	5

Thank you for your time, I just have two last questions for validation purposes….

Q21 What was your approximate time of arrival at the Emergency Department today….

H H : M M

Q22 And lastly may we take your date of birth….

D D M M Y Y

Thank you for time today….

Annex 5: Staff surveys

The staff surveys shown in the following pages serve as examples of the staff surveys conducted across all sites, other than any questions about the design solutions in the post-implementation surveys, which only applied to the pilot sites where the design solutions were implemented.

Pre-implementation survey

A&E Staff St George's Hospital - Baseline Survey

A About You

1 What is your role in the A&E Department?

- ☐ Consultant
- ☐ ED Matron
- ☐ Registrar
- ☐ Senior House Officer
- ☐ Senior ED Nurse
- ☐ Emergency Nurse Practitioner
- ☐ Triage Nurse
- ☐ Other Nurse. Please specify _____
- ☐ Healthcare Assistant
- ☐ Receptionist
- ☐ Porter
- ☐ Security
- ☐ Police
- ☐ Cleaner
- ☐ Other. Please specify _____

2 How long have you worked for this trust?

- ☐ Less than 3 months
- ☐ 3–6 months
- ☐ 6 months–1 year
- ☐ 1–2 years
- ☐ 2 years + Please specify: _____

3 What is the total length of time you have worked in an A&E setting?

- ☐ Less than 3 months
- ☐ 3–6 months
- ☐ 6 months–1 year
- ☐ 1–2 years
- ☐ 2–4 years
- ☐ 4 years + Please specify: _____

B Your day-to-day work life

4 Thinking about the last month, how would you rate your experience of the following aspects of work life at St George's Hospital?

	Poor ◄ ► Excellent										DK/ NA
Staff Morale	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Working conditions	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Working environment	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Teamwork	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Managerial support	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Efficiency of department	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?

5 To what extent would you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I enjoy my job	○	○	○	○	○
I would recommend this department as a place to work	○	○	○	○	○
I find my day to day work stressful	○	○	○	○	○
I look forward to coming to work	○	○	○	○	○
I would describe some of my colleagues as friends	○	○	○	○	○
I feel supported in my job	○	○	○	○	○
I tend to keep work related problems to myself	○	○	○	○	○
I am currently considering leaving my job	○	○	○	○	○

6 Thinking back to the past month of patient-facing shifts, how much time do you estimate you spent on activities not directly related to patient medical treatment (for example looking for equipment, efficiency of department, managing visitors, doing paperwork etc.)?

% per shift _____

7 Thinking back to the past month of patient-facing shifts, of the time spent on activities not directly related to their medical treatment, how much time do you estimate you spent dealing with patient hostility and aggression?

% per shift _____

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Annex 5: Staff surveys

C The patient experience

8 Thinking about the last month, how satisfied do you perceive people were with their experience at St George's Hospital?

	Not at all satisfied ← → Very satisfied										DK/ NA
All patients to the ED	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Specifically those treated in minors	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Specifically those treated in majors	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
All visitors to the ED	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Specifically those visitors accompanying those in minors	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?

9 Thinking about the last month, in your personal opinion, how satisfied do you perceive patients were with the following aspects of service provision?

	Not at all satisfied ← → Very satisfied										DK/ NA
Overall waiting times	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Efficiency of the department	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Professionalism of staff	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Empathy of staff	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Overall atmosphere	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?

10 To what extent would you agree or disagree with the following statements describing patients in the A&E Department today:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
People seemed generally relaxed	○	○	○	○	○
People seemed confident about their treatment	○	○	○	○	○
People seemed generally frustrated	○	○	○	○	○
People seemed stressed and anxious	○	○	○	○	○

D Your experience of violence and aggression

11 During your last full week at work, roughly how many times were you directly subjected to the following kinds of non-physical hostility or aggression? *(Please include all instances, even those you accept as being just a normal part of your working day)*

i) Offensive language or swearing _____ incidences last week

ii) Raised voice or being shouted at (including hostile or aggressive tone) _____ incidences last week

iii) Threatening body language or behaviour (including offensive gestures, unsuccessful physical assault, brandishing of a weapon) _____ incidences last week

iv) Uncooperative behaviour _____ incidences last week

12 Would you say that this was a typical week?

○ Yes ○ No

12 a) If this was NOT a typical week, would you say that in a typical week the number of incidences of non-physical hostility or aggression would be higher or lower?

○ Much lower ○ Lower ○ Higher ○ Much higher ○ Not applicable

13 If you did – or you were to – experience any kind of non-physical hostility or aggression, how likely would you be to...?

	Very likely	Likely	Unlikely	Very unlikely	DK/ NA
Inform the police	○	○	○	○	○
Call security	○	○	○	○	○
Log an official incident report	○	○	○	○	○
Alert your manager or supervisor	○	○	○	○	○
Tell other members of staff	○	○	○	○	○
Nothing at all	○	○	○	○	○

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Annex 5: Staff surveys

Cont . . .Your experience of violence and aggression

14 Last MONTH at work, how many times were you directly subjected to the following kinds of physical violence or aggression?

i) Being punched or slapped	____ incidences last month
ii) Being kicked	____ incidences last month
iii) Being head butted	____ incidences last month
iv) Being scratched or nipped	____ incidences last month
v) Having your hair pulled	____ incidences last month
vi) Being spat on	____ incidences last month
vii) Being struck by a weapon	____ incidences last month

15 Would you say that this was a typical month?

○ Yes ○ No

15 a) If this was NOT a typical month, would you say that in a typical month the number of incidences of physical violence or aggression would be higher or lower

○ Much lower ○ Lower ○ Higher ○ Much higher ○ Not applicable

16 If you were to experience any kind of physical violence or aggression, how likely would you be to...?

	Very likely	Likely	Unlikely	Very unlikely	DK/ NA
Inform the police	○	○	○	○	○
Call security	○	○	○	○	○
Log an official incident report	○	○	○	○	○
Alert your manager or supervisor	○	○	○	○	○
Tell other members of staff	○	○	○	○	○
Nothing at all	○	○	○	○	○

17 In the last month, to what extent do you think the following factors have contributed to non-physical and/or physical violence and aggression within the A&E Department?

	Not at all	Somewhat	A fair amount	Very much	DK/ NA
Lack of progression	○	○	○	○	○
Being distressed/frightened	○	○	○	○	○
Being poorly informed	○	○	○	○	○
Staff fatigue	○	○	○	○	○
Poor environment	○	○	○	○	○
Perceived inefficiency	○	○	○	○	○
Being intoxicated	○	○	○	○	○
Frustration	○	○	○	○	○
Being predisposed to violence / angry	○	○	○	○	○
Being clinically confused	○	○	○	○	○

Other:

18 In the last month, how have hostility, violence and aggression contributed to your feelings about the following:

	Not at all	To some degree	A fair amount	Very much	DK/ NA
General staff morale	○	○	○	○	○
Your working environment	○	○	○	○	○
Teamwork	○	○	○	○	○
The support you receive from management	○	○	○	○	○
Your personal motivation to come to work	○	○	○	○	○

19 On the last occasion that you can remember fearing violence and/or aggression from a patient, how fearful did you feel?

○ Not very fearful ○ A little bit fearful ○ Quite fearful ○ Very fearful

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Annex 5: Staff surveys

E Coping and managing

20 Thinking of the A&E Department as a whole, how well do you think incidents of violence and aggression are managed?

Not very well at all ← → Very well

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	DK/NA ⑦

21 Thinking of the A&E Department as a whole, how well do you think incidents of violence and aggression are prevented?

Not very well at all ← → Very well

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	DK/NA ⑦

22 To what extent would you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
My department (e.g. my supervisor/manager) takes effective action when staff report incidents of NON-PHYSICAL hostility and aggression	○	○	○	○	○
My trust takes effective action if staff are victim of NON-PHYSICAL hostility and aggression	○	○	○	○	○
My department (e.g. my supervisor/manager) takes effective action when staff report incidents of PHYSICAL violence or aggression	○	○	○	○	○
My trust takes effective action if staff are victim of PHYSICAL violence or aggression	○	○	○	○	○

23 If you had to choose one, which of the following factors do you think contributes most to preventing violence and aggression in an A&E Department?

- ○ Staff training in how to manage violence and aggression
- ○ Visible security staff or police in the Emergency Department
- ○ Giving clear information to patients and visitors (including being honest about waiting times and the reasons for delays)
- ○ A nice waiting-room environment
- ○ High levels of staff morale and comradeship
- ○ An effective system for reporting incidents
- ○ Other _____

24 Have you attended/been involved in any of the following? *(You may tick more than one answer)*

- ○ Conflict resolution training induction course
- ○ Conflict resolution training refresher course
- ○ Design Council project
- ○ Other _____

Additional Comments

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Annex 5: Staff surveys

Post-implementation survey

A&E Staff St. George's Hospital – Post-implementation survey (pilot site)

A ABOUT YOU

1 What is your role in the A&E Department?

- ☐ Consultant
- ☐ A&E Matron
- ☐ Registrar
- ☐ Senior House Officer
- ☐ Senior A&E Nurse
- ☐ Emergency Nurse Practitioner
- ☐ Triage Nurse
- ☐ Other Nurse. Please specify _____
- ☐ Healthcare Assistant
- ☐ Receptionist
- ☐ Porter
- ☐ Security
- ☐ Police
- ☐ Cleaner
- ☐ Other. Please specify _____

2 How long have you worked for this trust?

- ☐ Less than 3 months
- ☐ 3–6 months
- ☐ 6 months–1 year
- ☐ 1–2 years
- ☐ 2 years + Please specify: _____

3 What is the total length of time you have worked in an A&E setting?

- ☐ Less than 3 months
- ☐ 3–6 months
- ☐ 6 months–1 year
- ☐ 1–2 years
- ☐ 2–4 years
- ☐ 4 years + Please specify: _____

B YOUR DAY-TO-DAY WORK LIFE

4 Thinking about the last month, how would you rate your experience of the following aspects of work life at St. George's Hospital?

	Poor ←									→ Excellent	DK/ NA
Staff Morale	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Working conditions	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Working environment	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Teamwork	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Managerial support	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Efficiency of department	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?

5 To what extent would you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I enjoy my job	○	○	○	○	○
I would recommend this department as a place to work	○	○	○	○	○
I find my day to day work stressful	○	○	○	○	○
I look forward to coming to work	○	○	○	○	○
I would describe some of my colleagues as friends	○	○	○	○	○
I feel supported in my job	○	○	○	○	○
I tend to keep work related problems to myself	○	○	○	○	○
I am currently considering leaving my job	○	○	○	○	○

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Annex 5: Staff surveys

C THE PATIENT EXPERIENCE

6 Thinking about the past month, how satisfied do you perceive people were with their experience at St. George's Hospital?

	Not at all satisfied ◄——► Very satisfied										DK/ NA
All patients to the A&E	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Specifically those treated in minors	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Specifically those treated in majors	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
All visitors to the A&E	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Specifically those visitors accompanying those in minors	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?

7 Thinking about the last month, in your personal opinion, how satisfied do you perceive patients were with the following aspects of service provision?

	Not at all satisfied ◄——► Very satisfied										DK/ NA
Overall waiting times	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Efficiency of the department	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Professionalism of staff	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Empathy of staff	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?
Overall atmosphere	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	?

8 To what extent would you agree or disagree with the following statements describing patients in the A&E Department today:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
People seemed generally relaxed	○	○	○	○	○
People seemed confident about their treatment	○	○	○	○	○
People seemed generally frustrated	○	○	○	○	○
People seemed stressed and anxious	○	○	○	○	○

D YOUR EXPERIENCE OF VIOLENCE AND AGGRESSION

9 During your last full week at work, roughly how many times were you directly subjected to the following kinds of non-physical hostility or aggression? (Please include all instances, even those you accept as being just a normal part of your working day)

i) Offensive language or swearing _____ incidences last week

ii) Raised voice or being shouted at (including hostile or aggressive tone) _____ incidences last week

iii) Threatening body language or behaviour (including offensive gestures, unsuccessful physical assault, brandishing of a weapon) _____ incidences last week

iv) Uncooperative behaviour _____ incidences last week

10 Would you say that this was a typical week?

○ Yes ○ No

10 a) If this was NOT a typical week, would you say that in a typical week the number of incidences of non-physical hostility or aggression would be higher or lower?

○ Much lower ○ Lower ○ Higher ○ Much higher ○ Not applicable

11 If you did – or you were to – experience any kind of non-physical hostility or aggression, how likely would you be to...?

	Very likely	Likely	Unlikely	Very unlikely	DK/ NA
Inform the police	○	○	○	○	○
Call security	○	○	○	○	○
Log an official incident report	○	○	○	○	○
Alert your manager or supervisor	○	○	○	○	○
Tell other members of staff	○	○	○	○	○
Nothing at all	○	○	○	○	○

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Annex 5: Staff surveys

CONT . . .YOUR EXPERIENCE OF VIOLENCE AND AGGRESSION

12 Last MONTH at work, how many times were you directly subjected to the following kinds of physical violence or aggression?

i) Being punched or slapped	____ incidences last month
ii) Being kicked	____ incidences last month
iii) Being head butted	____ incidences last month
iv) Being scratched or nipped	____ incidences last month
v) Having your hair pulled	____ incidences last month
vi) Being spat on	____ incidences last month
vii) Being struck by a weapon	____ incidences last month

13 Would you say that this was a typical month?

◯ Yes ◯ No

13 a) If this was NOT a typical month, would you say that in a typical month the number of incidences of physical violence or aggression would be higher or lower

◯ Much lower ◯ Lower ◯ Higher ◯ Much higher ◯ Not applicable

14 If you were to experience any kind of physical violence or aggression, how likely would you be to...?

	Very likely	Likely	Unlikely	Very unlikely	DK/ NA
Inform the police	◯	◯	◯	◯	◯
Call security	◯	◯	◯	◯	◯
Log an official incident report	◯	◯	◯	◯	◯
Alert your manager or supervisor	◯	◯	◯	◯	◯
Tell other members of staff	◯	◯	◯	◯	◯
Nothing at all	◯	◯	◯	◯	◯

15 In the last month, to what extent do you think the following factors have contributed to non-physical and/or physical violence and aggression within the A&E Department?

	Not at all	Somewhat	A fair amount	Very much	DK/ NA
Lack of progression	◯	◯	◯	◯	◯
Being distressed/frightened	◯	◯	◯	◯	◯
Being poorly informed	◯	◯	◯	◯	◯
Staff fatigue	◯	◯	◯	◯	◯
Poor environment	◯	◯	◯	◯	◯
Perceived inefficiency	◯	◯	◯	◯	◯
Being intoxicated	◯	◯	◯	◯	◯
Frustration	◯	◯	◯	◯	◯
Being predisposed to violence / angry	◯	◯	◯	◯	◯
Being clinically confused	◯	◯	◯	◯	◯

Other:

16 In the last month, how have hostility, violence and aggression contributed to your feelings about the following:

	Not at all	To some degree	A fair amount	Very much	DK/ NA
General staff morale	◯	◯	◯	◯	◯
Your working environment	◯	◯	◯	◯	◯
Teamwork	◯	◯	◯	◯	◯
The support you receive from management	◯	◯	◯	◯	◯
Your personal motivation to come to work	◯	◯	◯	◯	◯

ESRO Design Council

Annex 5: Staff surveys

F IMPACT OF DESIGN COUNCIL PROGRAMME IN A&E

Thinking back over the past six months, would you say that each of the following has increased, decreased or stayed about the same?

22 The amount of time you spend on dealing with information requests from patients and visitors (for example, how long they have to wait, where they should go, what will happen next, etc.)

Increased by 20% or more | Increased by between 10% and 20% | Increased by less than 10% | Stayed about the same | Decreased by less than 10% | Decreased by between 10% and 20% | Decreased by 20% or more

23 The amount of time you spend on dealing with patient hostility and aggression

Increased by 20% or more | Increased by between 10% and 20% | Increased by less than 10% | Stayed about the same | Decreased by less than 10% | Decreased by between 10% and 20% | Decreased by 20% or more

24 The number of violent incidents

Increased by 20% or more | Increased by between 10% and 20% | Increased by less than 10% | Stayed about the same | Decreased by less than 10% | Decreased by between 10% and 20% | Decreased by 20% or more

25 Have you seen any of the following benefits from the Design Council programme? (Y/N)

Reduced patient requests for information	○ Yes	○ No
Improved patient flow through the department	○ Yes	○ No
Improved patient understanding of what to expect during their time in the ED	○ Yes	○ No
Reduced levels of patient frustration	○ Yes	○ No
An improved waiting experience for patients	○ Yes	○ No
Improved staff morale	○ Yes	○ No
An increase or improvement in staff understanding of the patient experience	○ Yes	○ No

26 Do you think the new patient signage etc (e.g. Guidance panels and leaflets) have had a positive impact?

○ Yes ○ No ○ Don't know ○ Not applicable

27 Do you think the People project (reflective sessions and incident tally) have had a positive impact?

○ Yes ○ No ○ Don't know ○ Not applicable

Additional Comments

ESRO Design Council

Annex 5: Staff surveys

Annex 6: Management interviews and secondary data collection

Control sites

Contextual information

Control sites were asked to provide their security record data for their respective A&E departments from October 2011 to September 2013.

1.	**What were the patient numbers for the A&E department from September 2011 until August 2013? Please provide this information for each month, if possible.**
2.	**Has there been any change in the number and nature of complaints through PALS since implementation? If so, by how much?**
3.	**Have there been any changes in staff numbers (full-time and part-time staff) since September 2011? If so, when did this occur and by how much did the A&E staff numbers change? Please document this by staff type if possible (e.g. receptionists, nurses, consultants etc.)**
4.	**Are there any hospital policies that could have affected the study or reports that could be informative for our analysis? For instance…** a. Is there any other initiative or programme currently in place dealing with frustration or violence and aggression? b. Is there any other policy, initiative or programme currently in place that may affect the results of this analysis? (e.g. change in visitation times or number of visitors per patient) c. Do you have any site specific reports or data on levels of violence and aggression?

Pilot sites

Contextual information and implementation costs

1.	**What were patient numbers for the A&E department over the year <u>prior</u> to implementation (total per week/month)?**
2.	**What have the patient numbers been for the A&E department <u>since</u> the implementation (total per week/month)?**

3.	**How many staff (by type) were employed in A&E prior to implementation and what were the average hours worked by staff group per week:**	
	Staff type	**Average hours per week**
	a. Consultant	
	b. Matron	
	c. Registrar	
	d. Senior house officer	
	e. Senior A&E nurse	
	f. Emergency nurse practitioner	
	g. Triage nurse	
	h. Other nurse. (Please specify)	
	i. Healthcare assistant	
	j. Receptionist	
	k. Security staff	
	l. Other. Please specify	
4.	**How many staff (by type) are employed in the A&E department post implementation and what are the average hours worked by staff per week:**	
	Staff type	**Average hours per week**
	a. Consultant	
	b. Matron	
	c. Registrar	
	d. Senior house officer	
	e. Senior A&E nurse	
	f. Emergency nurse practitioner	
	g. Triage nurse	
	h. Other nurse. (Please specify)	
	i. Healthcare assistant	
	j. Receptionist	
	k. Security staff	
	l. Other. Please specify	
5.	**What are the typical average salaries of the following type of personnel (per annum):**	
	Staff type	**Typical average salary (p/a)**
	a. Consultant	
	b. Matron	
	c. Registrar	
	d. Senior house officer	
	e. Senior A&E nurse	
	f. Emergency nurse practitioner	
	g. Triage nurse	
	h. Other nurse. (Please specify)	
	i. Healthcare assistant	
	j. Receptionist	
	k. Security staff	
	l. Other. Please specify	
6.	**What were the results of the tally poster part of the design package? Please can any recorded data be shared?**	

Annex 6: Management interviews and secondary data collection

Implementation costs

1. What were the <u>upfront costs</u> (product *and* installation costs) associated with the guidance project in the following areas?

Item	Product costs	Installation costs
a. Signage		
b. Digital equipment		
c. Leaflets		
d. Other		

2. What were the <u>upfront costs</u> associated with the people project in the following areas?

Item	Costs
a. Staff posters	
b. Staff booklets	
c. Training	
d. Other	

3. What are the predicted lifespans of the following products (i.e. when do you believe you will need to replace the following items)?

Item	Lifespan
a. Signage	
b. Digital equipment	
c. Leaflets	
d. Staff posters	
e. Staff booklets	
f. Training	
g. Other	

4. Were there any unforeseen costs? And, if so, what were they?

5. How long on average did staff (by type) spend working on/learning the design solutions?

Staff type	Overall time spent
a. Consultant	
b. Matron	
c. Registrar	
d. Senior house officer	
e. Senior A&E nurse	
f. Emergency nurse practitioner	
g. Triage nurse	
h. Other nurse. (Please specify)	
i. Healthcare assistant	
j. Receptionist	
k. Security staff	
l. Other. Please specify	

6.	**How long on average did staff (by type) spend on training for the people project? Were staff given time off for this training?**	
	a. Consultant	
	b. Matron	
	c. Registrar	
	d. Senior house officer	
	e. Senior A&E nurse	
	f. Emergency nurse practitioner	
	g. Triage nurse	
	h. Other nurse. (Please specify)	
	i. Healthcare assistant	
	j. Receptionist	
	k. Security staff	
	l. Other. Please specify	

Annex 6: Management interviews and secondary data collection

Semi-structured Questionnaire

The questions below provide an indication of the type of requests put to the management teams at the pilot sites post-implementation, although the interviews took a semi-structured format. Face-to-face post-implementation interviews were not conducted with the controls sites.

Introductions and background information

1.	**How long have you worked at the A&E and what is your role within the department?**

Respondent's name	Role
a.	
b.	
c.	
d.	

2.	**A&Es are a notoriously challenging place to work. What are the biggest challenges you experience with patients?**
3.	**What do you think might help improve both staff and patient experience?**

Observations

1.	**Do you believe the signage has helped the functioning of the department in any way? If so, in what way?**

Measure	Impact
a. Patients finding their way	
b. Patient understanding of the A&E process	
c. Patient understanding of the reason for any wait	
d. Staff ability to communicate the A&E process to patients	
e. Other (please state)	

2.	**Overall, since the introduction of the guidance and people project, has there been a noticeable difference in:**

Measure	Impact
a. Staff satisfaction / frustration	
b. Patient satisfaction in the A&E	
c. Patient frustration in the A&E	
d. The number of incidents of violence and aggression? If any impact, what are the characteristics of these incidents and how much (percentage) have they changed?	
e. The overall operations of the department	

3.	**When the people project was introduced, were actions taken to explain the project to staff (e.g. posters put up or emails sent)?**
4.	**What is your view on the success of the people project? Do you believe staff should have been better informed about the project? If so, where should more be done, from a management perspective?**

Complaints and security information

1.	**What is the procedure for the Patient Liaison Service (PALS) and what members of staff are involved in this process?**
2.	**Has there been any change in the number and nature of complaints through PALS and their nature since implementation? If so, by how much?**
3.	**Do you have any plans to reduce or increase security staff after the project?**

Staff absences and hospital policy

1. Has there been any change in the level of overall staff absences post implementation? If so, by how much (by staff group)?

Staff type	Change in absences
a. Consultant	
b. Matron	
c. Registrar	
d. Senior house officer	
e. Senior A&E nurse	
f. Emergency nurse practitioner	
g. Triage nurse	
h. Other nurse. (Please specify)	
i. Healthcare assistant	
j. Receptionist	
k. Security staff	
l. Other. Please specify	

2. Has there been any change in the level of stress-related absences post implementation? If so, by how much (by staff group)?

Staff type	Change in absences
a. Consultant	
b. Matron	
c. Registrar	
d. Senior house officer	
e. Senior A&E nurse	
f. Emergency nurse practitioner	
g. Triage nurse	
h. Other nurse. (Please specify)	
i. Healthcare assistant	
j. Receptionist	
k. Security staff	

Annex 6: Management interviews and secondary data collection

	l. Other. Please specify	
3.	**Are there any hospital policies that could have affected the study or reports that could be informative for our analysis? For instance…** d. Is there any other initiative or programme currently in place dealing with frustration or violence and aggression? e. Is there any other initiative or programme currently in place that may affect the results of this analysis? f. Have any comparable surveys been carried out on patients' attitudes pre and post implementation? (the surveys do have to be specific to the interventions) g. Have any comparable surveys been carried out on patients' attitudes pre and post implementation? (the surveys do have to be specific to the interventions) h. Do you have any site specific reports or data on levels of violence and aggression? i. Are there any indicators of operational efficiency that you record and can provide?	
4.	**Are there any elements of the programme you would not renew, or that you think require longer/a different approach to have an impact?**	
5.	**Do you believe it would be beneficial if more hospitals had signage like this and why?**	

Other comments can be made/picked-up as the meeting progresses, or after the questions above have been covered, as feels appropriate.

Annex 7: Topic guide for ethnographic study

Design Council V&A Evaluation

Topic guide for ethnographic study

ESRO researchers drew on the following overarching topics and themes while researching in A&E Departments. Researchers also referred to the 'trigger clusters' framework provided in the main body of this evaluation report when interpreting the impact of the design solutions.

The list of topics is not exhaustive and ethnographic study allows for new issues or questions to arise in context, and the introduction of topics and routes of conversation as and when they naturally occur.

TOPICS *FOR STAFF*

BACKGROUND

- Employment history
- General outlook on profession and working in A&E
- Functioning of department

WORKING WITH PATIENTS

- Key work challenges
- Trust's response to the challenges
- Perception of information provision to patients, patient satisfaction and patient experience
- Experience of hostility, aggression and violence in A&E

POST-IMPLEMENTATION

- General impression of signage
- Interaction with leaflets, signage and screens (where relevant)
- Observations on impact, e.g. patient knowledge, requests for information, frustration levels, clarity of process, communication, etc.
- Impact on running of the department
- Experience of the People Project

TOPICS FOR PATIENTS

OVERALL IMPRESSION OF THE A&E

- Previous experience of having been in an A&E Department

REVEALING REALITY

Annex 7: Topic guide for ethnographic study

- Waiting experience – environment, feelings and emotions
- Awareness of process and 'what happens next'
- Experience with staff

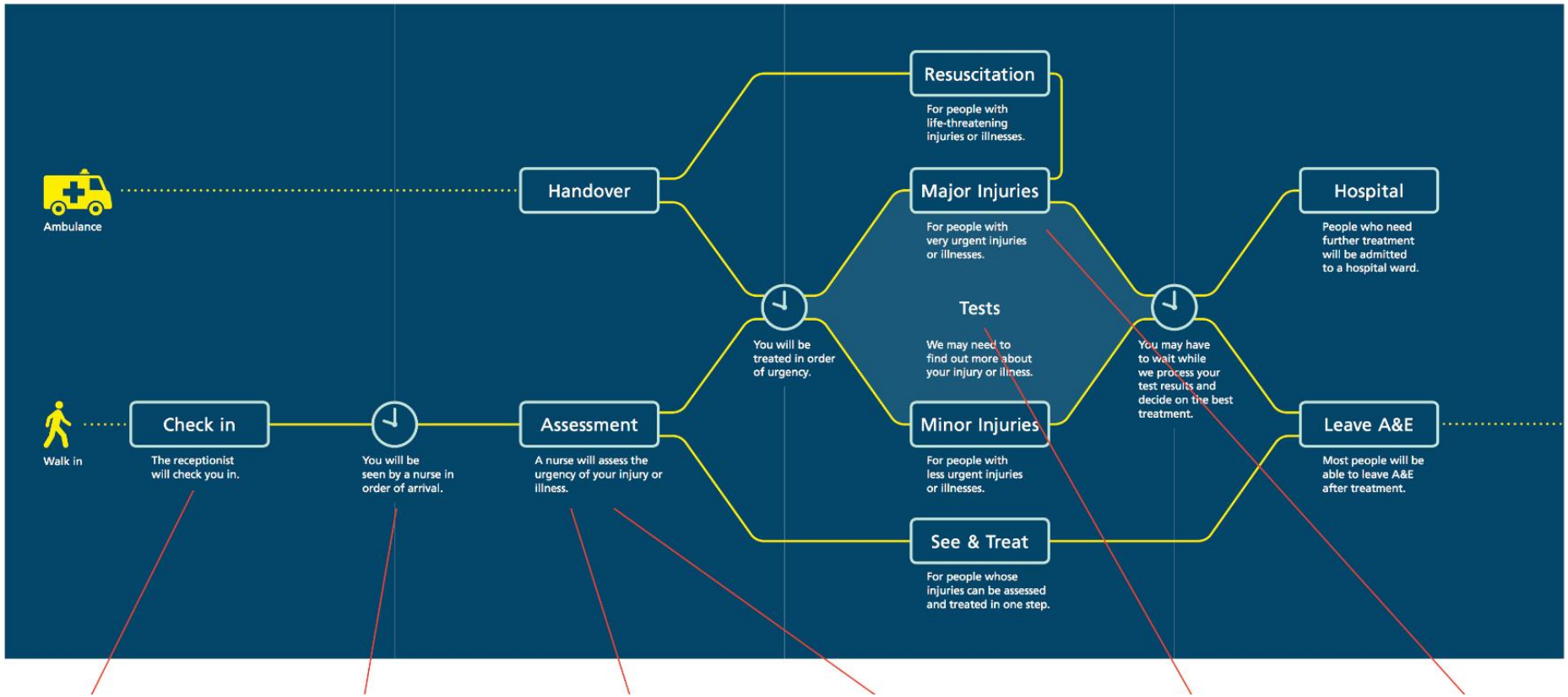
POST-IMPLEMENTATION

- Awareness of signage
- Use of signage
- Feedback on signage
- Suggestions for improvement

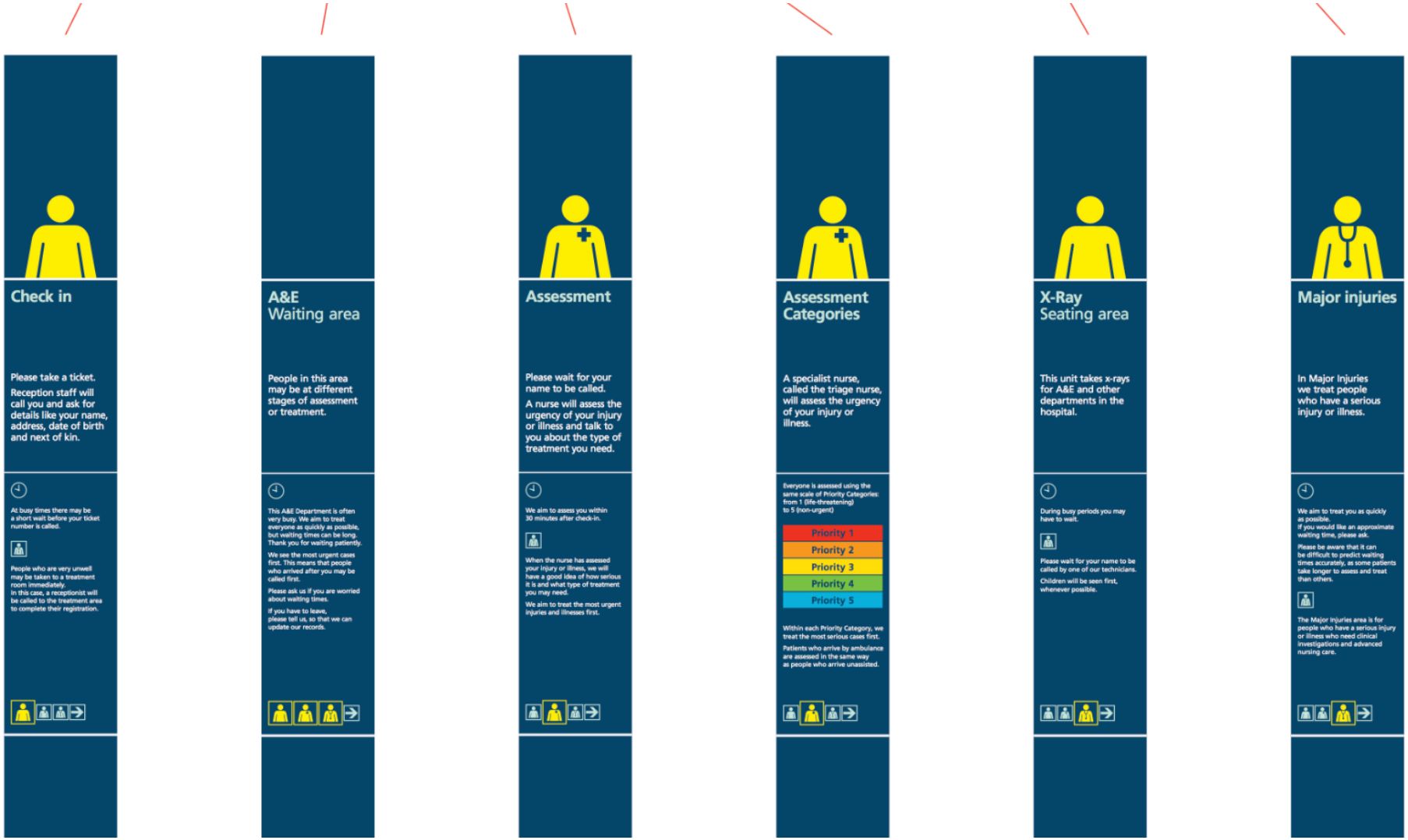
REVEALING REALITY

Annex 7: Topic guide for ethnographic study

Annex 8: Guidance project process map



Annex 8: Guidance project process map



Annex 8: Guidance project process map

Annex 9: Bibliography

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