Bulletin

FEBRUARY 2014

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REDUCING AGGRESSION IN A&E

Using better design to lower the temperature in hospital emergency departments sounds a great idea – but, like all aspects of public policy, its cost-effectiveness needs to be assessed rigorously. Together with the research agency ESRO, Frontier Economics developed an evaluation methodology for the Design Council that demonstrated benefits from an award-winning pair of projects on a scale of three times their costs – a result that should stimulate rapid adoption of the design principles elsewhere.

Accident & Emergency Departments aren't just the inherently complex, high-pressured and unpredictable places beloved of TV script-writers, but ones where extreme anxiety and frustration easily boil over into hostility and violence. In 2011 the Department of Health, together with the Design Council, launched a competition for ideas as to how design some of the tension out of "patient journeys" through A&E – which numbered some 21 million in England alone in 2012, and the total is expected to go on rising.

The winning team, led by PearsonLloyd, worked with three English hospitals to develop their ideas. Frontier was then asked by the Design Council to lead a cost-benefit analysis of the results.* PearsonLloyd's team began by identifying the various tension triggers endemic in the A&E experience, compiling the list summed up in Figure 1 below:

Figure 1: Triggers of violence and aggression amongst patients in A&E

- **Clash of people** – many areas are crowded with very different people forced together by stressful circumstances.
- **Lack of progression** – while all NHS trusts aim to treat 95% of patients within four hours, waiting without any sense of progression in a queue can be highly stressful.
- **Inhospitable environments** – A&E departments by their nature are full of sick and/or unhappy people and are rarely comfortable.
- **Dehumanising environments** – the way patients are managed can add to the "cattle truck" experience of an A&E department.
- **Intense emotions** – A&E patients may be experiencing pain, stress or even fear of death, in close proximity to others in similar states.
- **Unsafe environments** – crowding, the quantities of complex equipment and the state of some patients are bound to contribute to a sense of danger.
- **Perceived inefficiency** – from a patient's perspective, staff activities may seem disorganised and poorly prioritised.
- **Inconsistent response** – hospital rules, policies and regulations can be deeply hard to understand and make patient treatment seem almost random.
- **Staff fatigue** – working in A&E is highly demanding, shifts are long, and some staff may be struggling to cope both physically and mentally with the demands of patients.

Source: ESRO (2011) Understanding Violence and Aggression in Accident and Emergency Department

The two key elements of the work developed as a result were the "Guidance" and "People" projects. The Guidance Project tackled a very obvious source of frustration among patients – a lack of information about why and for how long they could expect to wait, and what course their often mystifying "journey" through A&E was likely to take. The People Project was designed to improve human interaction, helping staff to manage the difficulties of working in such stressful environments better.

The projects were developed in co-operation with three NHS Foundation Trusts (Chesterfield Royal Hospital, Guy's and St Thomas's, and Southampton University Hospital) and the solutions were then piloted in two other hospitals (Southampton General and St George's in London). For their evaluation,

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Frontier used two uninvolved hospitals with similar A&E traffic (Oxford John Radcliffe and King's College London), as "controls".

NOW I UNDERSTAND

The Guidance Project was built around the simple proposition that patients will be less frustrated (and therefore less aggressive) if their journey through A&E is signposted for them on a "process map" that explains who they will see, how they are being prioritised and why they may have to wait. Ideally the toolkit for this project would combine print information (posters, signs, leaflets) with real-time digital information (screens showing what's happening, how long the wait is, etc.). Perhaps inevitably, however, system glitches and conflicting priorities (in one case, the screens had already been earmarked for advertising displays) hampered full roll-out of this element during the trials.

The People Project, in any case, started from the proposition that impersonal information (i.e. "Guidance") could never be enough, and used several techniques to try to improve the interaction between patients, staff – and managers. But the linkage between the two was clear: as one staff member commented, the new information was a useful reminder to nurses and doctors that patients need help and explanation in an alarming environment they don't understand.

To evaluate the results, Frontier drew on a range of patient and staff surveys, conducted "before and after", as well as ethnographic observations and (for the cost-benefit analysis in particular) detailed management information from the hospitals involved and the "controls". We also conducted complementary management interviews.

The three questions we set ourselves to answer about the design solutions were:

1. Had they improved patients' experience of A&E?
2. Had they reduced the level of hostility, aggression and violence in A&E?
3. Had they provided good value for money?

The answers to the first question were clear. Patient surveys indicated a consistent improvement in experience: an increase in overall satisfaction, better patients' views of the time they had to wait and of departmental efficiency and a better understanding of the process. There was a sharp drop (from 17% to 9%) in the proportion of patients who felt they had been forgotten by staff, and also a fall in the proportion noting frustration amongst other patients.

Moreover, the Guidance Project itself was well received:

- 88% of patients felt that the Guidance Project clarified the A&E process;
- 75% of patients said that the improved signage made the wait less frustrating;

- complaints about poor information and communication fell by 57% after the introduction of the design solutions.

PULLING THEIR PUNCHES

Measuring the impact on violent or aggressive behaviour was critically important. Actual physical attacks in A&E departments are, fortunately, still not sufficiently frequent to make a robust comparative dataset. But threatening behaviour, up to and including unsuccessful assault, unfortunately is not that unusual, and it was this kind of behaviour on which our evaluation focussed.

Evidence from both patients and staff indicated a significant fall in threatening behaviour following the introduction of the design solutions. As Table 1 shows, it led to reductions in other kinds of disruption behaviour too. Moreover, the collection of this data helped inform the People Project and led to more pro-active management of the problems by staff.

Table 1. Impact of design solutions on aggressive behaviour

Incident type	Reduction in incidents
Threatening body language and behaviour	-50%
Raised voice, shouting, aggressive tone	-25%
Offensive language/swearing	-23%
Uncooperative behaviour	-2%

Source: ESRO; Frontier Economics analysis

THE PRICE OF PEACE

To carry out the value for money assessment, we based our calculation of implementation costs on those incurred by the pilot hospitals. This gave us an estimate for expected costs for an "average" A&E site of £60,000, of which the Guidance Project accounted for the greater part.

As shown above, the potential benefits to put on the other side of the scale were:

- a reduction in aggression;
- an increase in staff well-being;
- an improvement in patients' experience; and
- an increase in productivity.

Plainly, a full cost-benefit analysis should seek to ascribe the appropriate values to all these elements. However, in carrying out our value-for-money calculation, we narrowed our focus to the quantifiable impact of a reduction in aggression on the incidence of stress-related disorder.

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The exclusion of the other possible benefits from our calculations avoided the risk of overlap and double-counting in an area with many complex linkages. However, it also ensured that, by ignoring some highly significant benefits demonstrated in the research, our calculations of the value of the combined projects was highly conservative. No value is put on the improvement in the patient experience indicated above, for example, although it is highly probable that this leads to greater efficiencies.

The probabilities that staff subjected to aggression and violence in A&E will suffer from various kinds of stress disorder, and its likely type and extent, were calculated using work by World Health Organisation and the Home Office. The cost of the impact of such disorders on the quality of life, and the value to be attributed to this, was based on standard calculations used by the National Institute for Clinical Excellence.

We built in a further layer of conservatism in our calculations by assuming that the impact of successive bouts of aggression diminishes, while it is at least arguable that A&E staff get worn down rather than hardened by abuse. However, despite all the conservatism in our calculations, we still found that the value of the benefits from these design solutions amounted to three times their cost. The evaluation, therefore, clearly demonstrated both the impact of the projects on the level of aggression, and the low cost of achieving this relative to the value of doing so.

CONCLUSION

The evaluation methodology we developed illustrates ways in which different types of data collection and analysis can be combined to give a clear picture of policy results, from which elements can be selected for a cost-benefit analysis that can demonstrate not only whether the outcomes are positive but also whether there is value for money to be found in achieving them. Our focus on aggression and stress-related disorders was narrow: a broader, longer-run study is needed to capture the potential wider, indirect benefits, such as operational gains.

But meanwhile, the 1:3 cost-benefit ratio, calculated excluding many of the more obvious but less quantifiable benefits, indicates that roll-out of similar Guidance (and People) Projects in other A&E departments would be highly beneficial. They have been refined into a toolkit for other NHS trusts (www.AEtoolkit.org.uk), and it is hoped they will find the propositions compelling.

**Reducing violence and aggression in A&E: through a better experience – An impact evaluation for the Design Council (Frontier Economics, November 2013).*

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