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‘Have we let in the light?’

Evaluation of a refurbishment scheme incorporating The King’s Fund ‘Enhancing the Healing Environment’ design principles

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Abstract

Purpose - In 2000, a national initiative ‘Enhancing the Healing Environment’ (EHE) was launched by The King’s Fund to celebrate the millennium. This aimed to support nurse-led teams to undertake an environment improvement programme in their National Health Service (NHS) hospital. Mulholland (2003) described this as ‘exploring practical ways in which healthcare environments can be improved by the use of colour, light, art and design’. Sheffield Care Trust (SCT) decided to carry out this project in its Intensive Treatment Suite (ITS), a Psychiatric Intensive Care Unit (PICU) providing care for up to six patients. There were no known examples of an EHE project being undertaken in a PICU elsewhere in the NHS. The aim of this research was to examine the impact of EHE design principles in improving the patient experience, from the perspectives of staff and patients.

Design/methodology/approach – A focus group and individual interviews were used as the primary method of data collection. Secondary data comprised sets of statistics related to pre and post refurbishment periods.

Findings – The study finds staff and patients liked many aspects of the changed environment. Staff felt improved openness of space, natural light, fresh air, reduced noise levels and greater choice of spaces to provide care, were most important. Patients cited a high quality, comfortable and homely environment (not like a typical NHS ward) as important; they also valued high standards of cleanliness, tidiness, choice and being able to view the outside, open windows and let in fresh air. Experiencing high quality clinical care was equally important. Incidence of physical assaults decreased markedly in the new environment.

Practical implications – NHS mental health services trusts will understand the benefits of applying EHE principles in PICUs or similar environments. Some project management shortcomings are identified and improvements suggested.

Originality/value – This paper is of value to NHS mental health trusts who need to decide on the effectiveness of different design principles for PICUs or similar environments.

Keywords – Design, Environment, Patients, Staff, Mental Health, National Health Service, United Kingdom

INTRODUCTION

Even in the 1800's, observations were being made about the effect of the environment on hospital patients (Florence Nightingale, 'Notes on Hospitals', 1863). Since then, research has demonstrated the environment can have a positive impact on people's health and the healing process. But ... *"for many of today's patients, visitors and staff ... the hospital environment still remains soulless, drab and depressing"* (Extract from *Improving the Patient Experience – Celebrating Achievement: Enhancing the Healing Environment Programme 2003 – 2005*).

An attempt to redress these shortcomings in the NHS is 'Enhancing the Healing Environment' (EHE) (Waller and Finn, 2004), a national initiative launched in 2000 to celebrate the millennium by The King's Fund. The aim was to encourage nurse-led teams to undertake an environmental improvement in their hospital, using a King's Fund grant. .

All EHE projects had to meet a number of criteria:

- . A physical improvement in an area used by patients
- . Evidence that service users have been involved
- . In line with the Trust's strategic direction
- . Well conceived and aspiring to the highest design standards
- . Attractive, or at least pleasing to the eye
- . Good value for money
- . Designed to contribute successfully to the local environment

As part of the national roll out, SCT was invited to submit a project bid. SCT provides mental health services for adults in Sheffield, including a psychiatric intensive care unit (PICU) known as the Intensive Treatment Suite (ITS). There were no other known examples of an EHE project being undertaken in a PICU. Dent (2006) describes PICUs as being for patients who are too challenging for general wards and need a more secure environment. PICUs are locked and patients detained under the Mental Health Act. Environmental standards on PICUs are variable. There are national guidelines but no obligation to comply with them. SCT acknowledged that prior to the EHE scheme, environmental standards on the ITS were poor compared to its other inpatient services. Refurbishment was carried out early in 2006. Additional local capital funding was added to the King's Fund grant.

It was important to research the justifiability of using EHE principles because at the time, SCT was applying for NHS Foundation Trust status and had commenced a total review of inpatient services including significant estates reconfiguration. Clinical Directorates had indicated they wanted EHE design principles incorporated into revised inpatient services designs.

The aim of the research was to examine the impact of EHE design principles in improving the patient experience, from the perspectives of both patients and staff. The objectives were to evaluate what patients and staff receiving or providing care in the ITS liked or disliked about the environment (where possible contrasting experiences from before and after the refurbishment scheme), and to investigate any changes to numbers or types of recorded adverse incidents involving patients and staff on the ITS.

2.0 LITERATURE REVIEW

Mental health practitioners are concerned with the effect of environment on the mind. Evidence suggests this was known about many centuries ago. A MIND Fact Sheet (2006b) indicates Asclepiados invented a swinging bed which had a relaxing effect, and found music helpful. Soranus of Ephesus recommended patients should be kept in light and airy conditions. Roman treatment concentrated on 'pleasant physical therapies, warm baths, massage, diet, well lighted and pleasant rooms, and music'. This enlightened approach only persisted until the final years BC. The Fact Sheet describes conditions in UK institutions in the 18th Century as extremely poor; a building at Newcastle had chains, dungeon like cells and was perceived as less comfortable than a cow house. With few exceptions, such as the private York Retreat founded in 1792 by the Quaker philanthropist William Tuke, such conditions persisted until the beginning of the 19th Century.

By this time, social culture had changed. Another MIND Fact Sheet (2006a) notes a Select Committee was set up, whose report commented on 'appalling conditions – cramped and crowded accommodation with excrement on straw'. This culminated in the Lunacy Act (1845) requiring counties to provide asylums.

This change in approach was described by Hickman (2006). An asylum, Brislington House, offered extensive grounds with facilities including a bowling green, fives court, football and cricket pitches and opportunities for gardening and agriculture. Such characteristics were common in asylums being developed at this time in Britain, France and Germany (Ray, 1846, cited in Hickman, 2006); many buildings had extensive views of the countryside and were open to light. By the 1950s these large institutions were being intensely criticised. Enoch Powell's 'water tower' speech of 1961 signalled the beginning of asylum closures combined with the development of community care.

The 1970s onwards saw rapid change in approaches and attitudes to the mental health care environment. Key literature from 1970 until the present day includes:

1970	Humphrey Osmond, <i>Function as the basis of psychiatric ward design. Environmental psychology – man and his physical setting</i>
1973	NHS Health Building Note (HBN) 35 – the concept of a Department of Psychiatry in a general hospital
1982	Worcester Development Project Evaluation (Mental Health Buildings Evaluation Pamphlet No.3, DHSS, 1982)
1988	Revised HBN 35 – seen as indeterminate, influenced by the Worcester Project but still influenced by the 1973 concept
1989	McIntyre et al, <i>Inpatient psychiatric care: the patient's view</i>
1991	The NHS Handbook
1991	Medical Architecture Research Unit (MARU), <i>Building for Mental Health</i>

1993	NHS Design Guide, <i>Accommodation for adults with acute mental illness – Options for the 90s</i>
1996	A further revision of HBN 35
1998	Royal College of Psychiatrist's Report, <i>Not just bricks and mortar</i>
2001	Mental Health Policy Implementation Guide – National Minimum Standards for General Adult Services in Psychiatric Intensive Care Units (PICU) and Low Secure Environments

Common themes to take into account in the design of mental health care environments, include the need for space; single rooms; access to outside areas and exercise facilities; separate facilities for women; access for disabled people; well designed furniture and fittings; co-ordination of floor coverings and colours; availability of natural light and ventilation, and reduction of unwanted noise

These developments cannot be divorced from corresponding research and developments in pharmacology and psychiatry, which influenced societal and governmental perceptions of how mental health care should be provided. Developments appear to have swung from one end of a continuum to the other, and back again. The Romans displayed 'enlightened' thinking, which degenerated into an 'out of sight, out of mind' attitude typified by extremely poor environmental conditions. A change back towards 'enlightenment' (based on modern perceptions) only commenced in the 19th Century.

The key question in all of this seems to be (Jones, 1988, cited in NHS Estates Design Guide 1993)

"What does the building say to, and do for, the user?"

A possible answer is outlined by the NHS Handbook 1991 (also cited in the NHS Design Guide 1993)

*"... there is also an increasing recognition within mental health services that it is not only a matter of **what** is provided, but **how** it is provided and that future planning should be not only about what the services **look** like but also what they **feel** like ..."*

EHE Project Teams were tasked with examining ways to improve the healthcare environment by use of colour, light, art and design. 'Design' suggests an overarching approach, as confirmed by the King's Fund own literature (Waller and Finn, 2004) advising that 'design' encompassed six facets; signage; public spaces; social spaces; private spaces; links with the surrounding neighbourhood and design quality.

Since the 1960s there has been considerable research on applying design based approaches to the built healthcare environment; it can be difficult to identify which studies are relevant to mental health. The extent is such that the DoH commissioned a project to review studies and articles

related to how the physical environment might affect staff and patient health outcomes (Phiri, 2006). Where the reviewed articles relate to mental health, themes explored include noise; temperature; use of colour; arrangement of furniture; effects of spatial density; access to views, nature and the outdoors. These broadly correspond to EHE design principles, suggesting all are relevant.

A pre-eminent researcher in this field is Professor Roger Ulrich; Phiri's document cross-references many of Ulrich's studies. Gusack (2006) observed Ulrich arguably "has more influence on UK hospital design than anyone since 1973", having been brought in by the DoH in 2005 as an advisor. Ulrich's presentation papers identify research leading to what he describes as 'evidence based design'. Ulrich (2003) identifies the aim as creating an environment that improves health outcomes for both patients and staff, and suggests a range of design features for achieving this, linked to social support; control; physical activity and access to nature or other distractions. Ulrich's research identified some items e.g. abstract paintings, as increasing stress. Health care building designers need to refer to the research to identify what is 'suitable' and what is not. These themes and related issues e.g. the role of trees, plants, the impact of visual landscapes – typify Ulrich's approach. The themes are also broadly similar to EHE guidelines.

Ulrich's work does not consider colour, although this is an important EHE principle. Until the 1990s research reveals little on the effects of colour in healthcare environments. Birren (1969 and 1978, cited in Phiri (2006)) suggested different colours could trigger reactions in people and/or influence people's moods. There were some infamous studies on the use of 'pink' to reduce aggression (also included in Phiri's document, but noted to be largely discredited or unproven). This situation was alleviated in 2004 with the publication of Dalke *et al*'s 'Lighting and Colour for hospital design'. This joint research drew on previous studies carried out in the UK and USA to explain the relevance of different aspects of colour and lighting design within hospitals. Unlike other literature it also highlights some specific needs of patients with mental health problems. Research at airports and railway stations had demonstrated how the psychological power of colour and control of lighting could influence the mood of people who might be anxious, disorientated or over-emotional.

The issues identified as particularly relevant to mental health were:

- . A refurbished environment in a PICU resulting in time spent as an inpatient being reduced by 70%
- . Confined environments, and those with certain strong colours, can be threatening spaces to those with mental health problems. Patients had sometimes reported intolerance of oranges and reds, and 48% perceived ward conditions had a negative effect on their health

It concluded that using 'bright colours' to 'cheer up' an environment could be over stimulating. By contrast, an effect known as 'greyed' colour (colours containing a small proportion of black) proved to be relaxing and reduced stress. This confirms Lawson and Phiri (2003) who found 'rather bright and strong colours' on a new mental health unit, were disliked by many patients.

When considering lighting, having suitable windows/a view out, is seen as extremely positive, reducing feelings of isolation and claustrophobia, and giving contact with the outside world. It is not difficult to imagine the potential benefits of such provision in a PICU of limited size, which is locked for safety and security reasons. To be effective, lighting needs to be well controlled and maintained, and windows must be at a suitable height. Use of features like glass blocks and roof lights to maximise availability of natural lighting is recommended, as people prefer natural to

electric lighting in most situations.

In the section of Phiri's document related to violence and damage to property, he identifies aggression in psychiatric settings as a recurring issue. He concludes literature has not focused on the role the physical environment plays and that there is a need to conduct more studies in this area. Mulholland (2003) supports this, indicating that initial evaluations (in acute NHS Trusts) suggested EHE project improvements reduced aggressive behaviour by patients (and their relatives) towards staff, as well as helping the healing process for patients.

Lawson and Phiri (2003) noted that in one mental health unit, levels of patient aggression plunged dramatically, and the need for enforced seclusion dropped by 70%, following a rebuilding programme. They found treatment times reduced by about 14%. Patients also spent significantly less time in seclusion rooms. Actual numbers of verbal and physical abuse incidents remained similar, but *severity* dropped significantly e.g. instances of self-harm were reduced by two-thirds. They concluded patients in new (better designed) hospitals were psychologically calmer – life was better for patients and easier for staff.

There is considerable evidence to suggest the right design features enable the built healthcare environment to contribute significantly to patients care and treatment. Some aspects of this are known to impact on the care of people with mental health problems.

It is an element of care that has been known about, but not necessarily practised, for centuries. There appears to be a need for further research into how healthcare environment design could reduce aggression in psychiatric inpatient facilities.

3.0 METHODOLOGY

The research was a phenomenological-based study. Reality was seen as a social construction (Morgan and Smircich, 1980) and qualitative research methods used. The researcher only attributes to the research subjects ideas they actually hold about the world in order to understand their motives, reasons or actions (Becker, 1996). This approach was seen as reinforcing the validity of acknowledging the experiences of mental health patients and their carers (staff).

Data collection was via individual interviews and a focus group. Individual interviews were carried out with patients. It was believed this approach would seem less threatening and be more likely to provide rich data (Collis and Hussey, 2003). Interviews are appropriate when there is a need to fully understand impressions or experiences; obtain a range and depth of information and develop a relationship with clients (McNamara, 1999). An individual interview with the Ward Manager also took place; this was to prevent undue influence on the views of other members of staff or creation of bias. Discussion with other ward staff was via a focus group – partly for expediency and partly because they had shared a common experience and the research was about evaluating this (McNamara, 1999). The overall research design was that of a case study (Yin, 1994) as it sought to understand how or why the changes in the care environment impacted on patients and staff; the event was contemporary (work was carried out in 2006) and it was a unique situation (no other PICUs in the UK having been refurbished using EHE design principles).

As the objective was to evaluate this experience, purposeful sampling was used (Fox, Hunn and Mathers, 2002). This generated a small sample size, unsuited to statistical analysis, which is common to qualitative research. It was essential to select people who had either received or

provided care in the ITS, and care was taken to identify people who had experience of the environment both before and after the refurbishment scheme.

Individual interviews with 3 patients (1 male; 2 female – all with stays in excess of 1 month in the PICU), and the Ward Manager (female – 3 years working in the PICU), and a focus group with 3 members of staff (1 male; 2 female – all had worked for several years in the PICU), were carried out in July 2007. This was a smaller sample size than originally intended. Many patients were simply not interested in participating; others were too ill. This is a common difficulty when attempting to carry out research involving people with significant mental health problems. Nonetheless, the patients interviewed provided rich and interesting data. Similarly, despite much initial interest and several approaches to staff, only 3 people volunteered to join in the focus group. However their ability to compare the pre and post refurbishment was very helpful. All research was carried out in a natural location (either the hospital or people's homes) which is recommended for qualitative research (Collis and Hussey, 2003)

Before the study could commence, permission was obtained via the NHS COREC research application process, as it involved interviewing patients and staff. Anonymity and confidentiality were stressed at all times; this was important as the study context could be easily recognised. Bryman (2001) advises this can be problematic in qualitative research.

A coding process (Miles and Huberman, 1984) was used to analyse transcripts from the interviews and focus group. This involved reading the transcripts and original, descriptive coding sections, and allowing themes and categories (pattern codes) to emerge. This made the data easier to handle and enabled the researcher to review it until satisfied with the interpretations made. The descriptive coding process produced 47 codes; following the pattern coding process this reduced to 17 themes/categories.

Triangulation was carried out by examining statistics (length of patient stay; staff sickness; staff turnover; numbers and types of adverse incidents) related to the 6 month pre and post refurbishment scheme periods, to see if there were demonstrable differences which could be linked in any way to the qualitative data. This may contribute to the credibility (Lincoln and Guba (1985), cited in Collis and Hussey (2003)) of a phenomenological study. SCT formal reports to the King's Fund (which included views of patients taken by the Project Team prior to the refurbishment scheme) were also examined.

4.0 FINDINGS

A series of questions were developed for guiding interviews and focus groups. However, as the research progressed it became clear patients had strong views about the duality of the built environment *and* clinical care contributing to improvements in their health. Staff also expressed views about other matters that compromised their ability to give optimum patient care.

What patients like or dislike about the built environment

The likes and dislikes are grouped by themes.

Homeliness

The new environment was *homely*. For example, having a selection of different, good quality furniture; bean bags to lie on; pleasant laminate flooring and carpets; nice curtains; some

bedrooms having en-suite facilities (a personal shower and toilet). It was *"like your own home environment, that's how rooms should be"*. Most importantly *"it was not like a hospital"*.

Comfortableness

Homeliness was enhanced by *comfortableness*. This was achieved by the type of furniture e.g. big settees, comfy chairs, being able to *'loungue about and lie on'* the bean bags, beds being made up nicely and changed regularly. Pre-refurbishment, patients had thought the furniture uncomfortable. All patients liked provision of a large, high quality television. It was a focal point and distraction (from health problems); something about which they could exercise choice (which programmes to watch) and was *homely* - satellite TV (SKY) is provided. This replicated what patients had at home. Choice was extended to music (via a stereo system) and a large selection of DVDs. One patient liked the choice of being able to watch another TV in the female only lounge.

Quality

Patients found the *quality* of the furniture and furnishings surprising. High quality was not normally associated with the NHS, it was *"a bit like going with BUPA"*. Pre-refurbishment, these things had been perceived as looking cheap.

Plants/Gardens

Two patients really liked the plants inside the ITS; partly for being real and partly for contributing to the *homeliness*. There is also an external garden area which is not actually accessible but can be viewed from a veranda-type setting.

Access to the outside world

Provision of a roof top garden feature was beneficial – but not simply because it was a garden. The importance was being able to look outside and not psychologically losing contact with the rest of the world, *"... look out of windows and watch the world go by ... look outside and see people, it helped with treatment ... you need that outside world to remember how things are"*.

This connectedness was helped by access to fresh air and being able to open windows (even when this was restricted by bars or safety catches). *"It's nice that windows are kept open ... it does give you a sense of the outside, of freedom, outside doesn't seem so far away ... something like that does help you somehow not to lose touch with what's happening outside"*.

If the windows could not be opened for any reason, this was disliked. The consequences of being unable to do this and/or being totally enclosed were seen as dire. *"It would be terrible, like how I felt when I were in prison"*. One of the dislikes about the ITS related to a bathroom which had no windows; this represented an institutionalised setting. One patient thought it had been forgotten about during the refurbishment.

Cleanliness

Cleanliness was important; all patients expressed surprise at the cleanliness of the ITS compared to other wards or hospitals they had received care in. These were described as mucky, scruffy or smelly, with staff who didn't care about the environment, whereas the ITS was *"kept very clean, to a high standard – there's no smell of hospital"*.

Artwork and Colours

One patient particularly liked the artwork, describing the different textures and colours, and how a member of staff has used these as a symbolic representation of improving health, although others did not really remember this aspect. Pre-refurbishment, a patient had commented the posters made them feel ill. No patients commented on the general colours used in the refurbishment scheme, apart from the colour in the 'enclosed bathroom'; it was suggested a change of colour could make this room feel less institutionalised.

Provision for visitors

Patients who received visitors, especially children, liked being able to access separate meeting rooms for this. These were described as furnished to a similarly high standard to the rest of the ITS; visitors were made welcome and children weren't scared as they didn't encounter other patients. It was stated that pre-refurbishment, the only place to meet with visitors was in the Smoke Room.

Food

All patients mentioned the high quality and range of choice of food provided on the ITS. Although not part of the environment as such, it was clearly seen as important to the experience of care.

Safety

Apart from items already mentioned, there were few specific things that patients disliked. Aspects they mentioned related to the need to make the environment secure, although the necessity of this was understood, *"The doors do open but there's bars. I'm not complaining, they do have to keep people in when they're not very well, on Sections"*

Space

Pre-refurbishment, patients had strong concerns about lack of space and how ill this made them feel. However, space was not mentioned specifically by the patients interviewed for this study.

Overall perceptions

Patients consulted by the EHE Project Team, wanted an environment that 'made them feel like they were worth it'. Patients interviewed for this study, tended to compare the ITS with other environments in which they had received care and felt it was better overall. It may be because there are fewer patients compared to other wards (the ITS has 6 beds; other SCT wards may have 20+). It was uncertain if this was because there was more space available or because there is a higher staff:patient ratio; or other factors as indicated above. One patient commented how quiet it was by comparison. *"I just liked all of it – if all psychiatric units were like that it would be great"*.

What staff like or dislike about the built environment

All staff had dislikes about the ITS pre-refurbishment which fell into five themes:

Space

- . Could accommodate 6 patients but only had seating for 4 at a time to eat or watch television
- . Only 2 real options for 'sociable space' – the smoke room or the TV area. The conservatory was unsuitable, *"couldn't sit in there any length of time; in winter just too cold and in summer just too hot"*. Otherwise patients could only sit in their bedrooms
- . Rooms *"doubling or trebling up"* on functions; nursing office *"the size of a roomy broom cupboard"* and a tiny kitchen *"weren't enough room to swing a cat it were cluttered"*
- . No space for activities of any kind

Light

- . No outside light coming into the main lounge area
- . Corridors being really dark requiring constant artificial lighting; compounded by dark coloured floor coverings

Fresh air

- . Constant complaints about the lack of fresh air

Noise

- . Noise levels e.g. caused by unsettled patients, amplified by the confined space

Other design features

- . No facilities for private visits, especially visits from children
- . The only place to listen to music was in the smoke room
- . A perception that it increased staff sickness, people catching viral infections very quickly *"like a little pool of germs"*
- . Design may have increased potential for adverse incidents; staff had to factor the environmental problems into pre-admission risk assessments and some patients could not be admitted
- . Lack of confidentiality including poor access routes
- . Did not appear to follow any DoH guideline recommendations; staff resented being asked to care for challenging patients in a 'make do' environment

These dislikes were mentioned in one way or another, by all staff, *"it was truly useless as an environment for any kind of patients"*. The only pre-refurbishment feature liked by staff was having clear visibility. All agreed this was important for safety in a PICU. When the refurbishment was being planned, staff and patients were asked for their views; according to staff, both wanted the same, *"everybody wanted light and some air and a feeling of space they were the three things"*.

Staff had clear ideas about what they liked and understood patients liked in the post-refurbishment ITS; these can be expressed within the same five themes.

Space

- . A feeling of openness helped by light coloured floor coverings: *"Because the flooring is lighter it looks half as big again"*
- . Four separate social spaces for patients: dining area, lounge, conservatory and smoke room (and all much improved from before)
- . A room for patients to do occupational therapy type activities – some proactively ask to do this
- . Better provision of meeting rooms/rooms not needing to double up
- . New female only lounge and another separate small lounge; has also helped to provide a choice of 2 different TVs to watch
- . Patients being able to keep out of each others way

Light

- . *"We've got light coming in"*

Fresh air

- . Conservatory has large French doors which can be opened for fresh air

Noise

- . There are many more quiet spaces; patients can be taken to these without staff having to

resort to use of the seclusion room. *"The conservatory (has) become the new low stimulus area because it's quiet"*

Other design features

- . New artwork which patients enjoy or are inspired by
- . Plants (internally) – some patients find it therapeutic caring for these
- . Much easier to have children visiting safely
- . Feels much calmer, fewer *"really dramatic"* adverse incidents with patients
- . Dining area accommodates all patients at meal times and is multi-functional – for listening to music or doing other activities
- . Patients commenting *"It's like a 4 star hotel"*; not wanting to return to other wards and/or feeling less worried about future re-admissions
- . Patients perceiving the TV area as somewhere comfortable to be

Staff seemed surprised and pleased some of their fears about the new environment were unfounded. They had thought observation might be difficult, or patients would use items as missiles, but this had simply not happened. The Ward Manager acknowledged these concerns but felt staff had adapted therapeutic risk management so that few real problems arose. She also attributed this to staff actively using the different spaces with patients. Interestingly, it was suggested patients had stopped causing physical damage to the ward environment post-refurbishment, *"So far we haven't had any deliberate damage to anything at all"*

However, staff had concerns about aspects of the refurbished environment; these were:

Access to outdoors

There should be an actual garden so that patients could go outside. A visible roof garden feature was an improvement, but had limitations. Staff agreed patients frequently commented about this and were consistent in this dislike above others, *"you can look but you can't touch"*. However, staff also felt patients on a PICU tended to accept this shortcoming due to the overall secure regime on the ward.

Space

The need for improved storage had not been addressed, despite this being raised at the planning stage, but it was better than before. Meetings can be held without interruption as rooms no longer double as storage areas. There had been compromise on re-use of space and hard choices made, for example between having an OT/activity room or a designated staff room. It had been necessary to come down on the side of what would benefit patients. The Ward Manager also acknowledged best use had been made of the available space, and mentioned the structural shape (L-shaped) was not ideal – although it was difficult to suggest what would be an ideal shape for a PICU.

Other Design Features

The Focus Group thought too much weight had been given to EHE concepts and not enough to the basic infrastructure. This related partly to how space had been re-used but also to very basic things such as existing toilets and bathrooms not being upgraded, just given a coat of paint. The group attributed such problems to a lack of experience of the ITS among members of the EHE project group and/or their views and suggestions not being listened to sufficiently. The refurbishment was completed over 24 months ago but this is still a source of discontent for them.

They had mixed feelings about the artwork. Large, multi-coloured/textured pictures were seen as liked by staff, patients and visitors. The Ward Manager also felt these were liked by patients; aspects of these pictures were stated to remind patients of home or even inspire patients to 'have a go' at art as an activity. The group saw other paintings (done by an ex-patient) as simply messy and squiggly. There was a perception these paintings were only on display because they were the work of an ex-patient, not for their merits. They suggested a greater mix of different types of art to cater for people's various tastes.

Temperature Control

There were significant concerns about lack of air conditioning. Apparently this had been strongly requested at the planning stage but ruled out on grounds of cost. There is a ventilation system but it does not provide cool air. It was stated that in hot weather, daytime internal temperatures could reach 33 degrees and remained in the 20 degree range at night. Hired air conditioning units had been provided which, though effective, were extremely noisy. A choice had to be constantly made between excessive noise or excessive heat.

Overall perceptions

Whilst identifying shortcomings, staff felt unanimously the post-refurbishment environment was greatly improved and that patients also appreciated the changes, *"in most areas improvement has been beyond recognition and far more than I ever thought it were going to be"*. If they were going to change anything they would want more storage space, a designated staff room, another interview room and actual outdoor space. One person sounded a cautionary note, *"if you're going to have a specialist service you've got to have a specialist environment ... the ITS has just had to make do and mend and to a certain extent we are still having to"*.

Findings of the secondary data

Four sets of statistics were compared, relating to two 6 month periods, pre-refurbishment (August 2005 – January 2006) and post-refurbishment (April – September 2006). Information for the 2 month period (February and March 2006) when the ITS was decanted into temporary accommodation, although shown in the sets of information, has been discounted as irrelevant.

Statistics considered were: length of patient stay; staff sickness; staff turnover and numbers and types of adverse incidents (adverse incidents are categorised in SCT as accidents or other

untoward events that require mandatory or statutory reporting to the Trust's Risk Management department. They are defined by main Cause Group (descriptive), Cause 1 (category) and Cause 2 (root cause)).

Length of patient stay

Table 1 – ITS Length of Stay (Days) for Spells ending in the specified periods

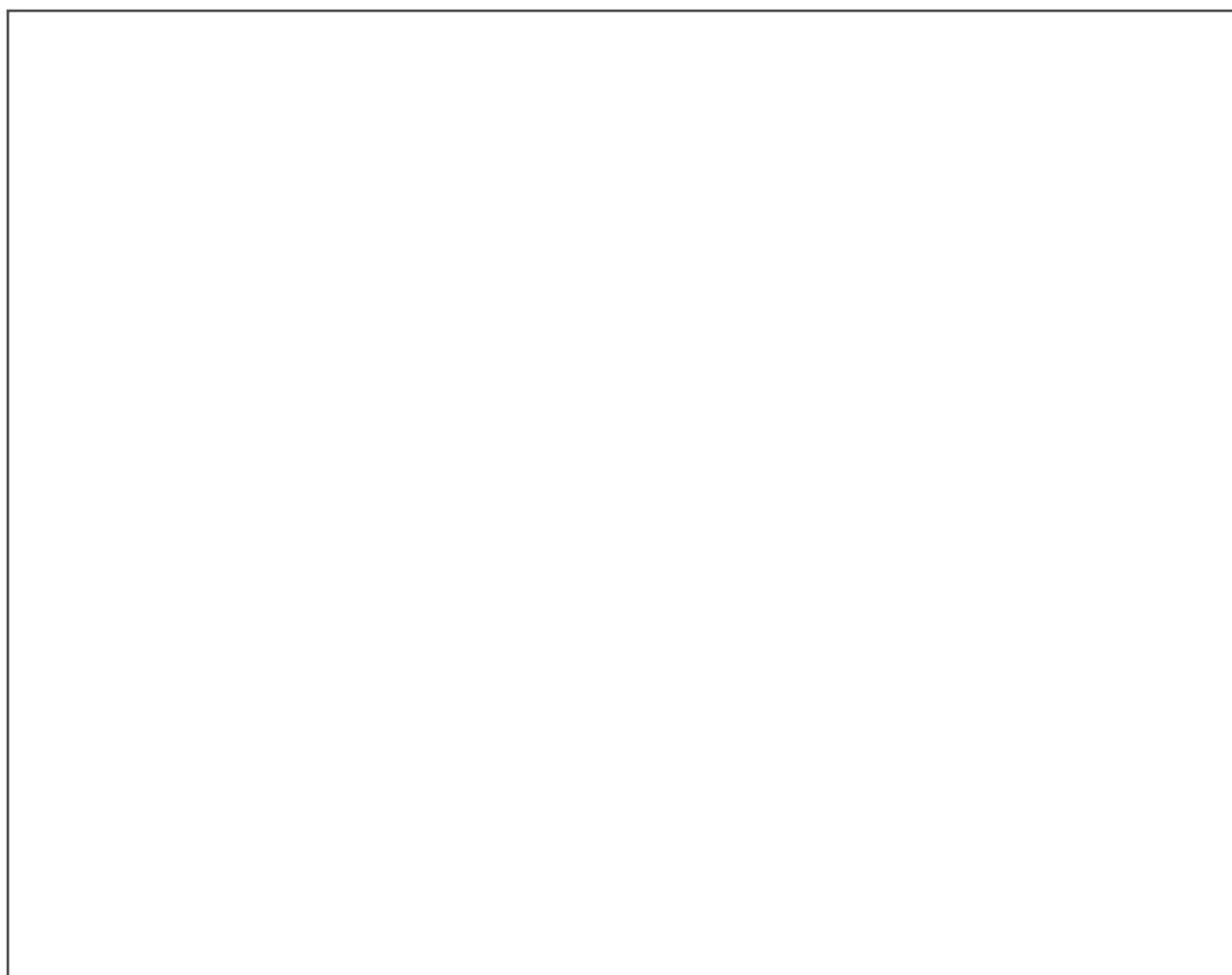
Data	August 2005 – January 2006	February 2006 – March 2006	April 2006 – September 2006
Spells ended	14	5	16
Average length of stay	67.8	32.6	54.1
Maximum length of stay	360	75	280
Minimum length of stay	9	8	12

Note: the number of stays are relatively small as the ITS only has 6 beds, so an odd 'long stay' can have a big effect on averages

Patient throughput was very similar; 14 spells ended pre-refurbishment and 16 spells post-refurbishment. Average length of stay changed from 67.8 to 54.1 days: a reduction of 20.2%. Maximum length of stay also decreased from 360 to 280 days: a reduction of 22.2%. Minimum length of stay increased very slightly, up from 9 to 12 days.

Staff Sickness

Actual sickness absence rates for all ITS staff are shown in the following diagram:



The red trend line is based on the total sickness absence figures
 Note: In SCT, short term sickness = up to 10 working days; long term sickness = 11 plus working days

Figure 1 – ITS Staff Sickness Absence Rates: April 2005 – September 2006

Sickness rate percentages for the whole of SCT are shown in the next table:

Table 2 – Month on month % sickness for Sheffield Care Trust: August 2005 to September 2006

6 months pre-refurbishment		2 months decant period		6 months post-refurbishment	
Month	%	Month	%	Month	%
August 05	6.33	Feb. 06	5.21	April 06	4.82
Sept. 05	5.25	March 06	5.73	May 06	6.28
Oct. 05	5.07			June 06	5.77
Nov. 05	5.94			July 06	5.01
Dec. 05	6.21			August 06	5.17
Jan. 2006	5.64			Sept. 06	5.53

Pre-refurbishment, sickness rates were mainly below Trust average and comprised mostly short-term sickness. Post-refurbishment, rates were consistently above average with a rising trend,

hitting a very high rate of nearly 25% in September 2006; nearly 4 times the average. This was caused by a combination of short and long term sickness.

Since the original research was carried out, sickness rates in the ITS have, generally, remained high and above Trust averages (which have continued at mainly between 5 – 6%). In the period October 2006 – June 2008 (latest date for which information is available), ITS sickness rates were as follows:

Table 3 – ITS Staff Sickness Absence Rates: October 2006 – June 2008

Month	Total sickness %	Long Term sickness %	Short Term sickness %
October 2006	12.31	10.04	2.27
November 2006	16.03	13.54	2.49
December 2006	23.97	15.97	7.99
January 2007	21.23	15.14	6.09
February 2007	12.35	10.44	1.91
March 2007	10.45	7.66	2.80
April 2007	11.67	7.04	4.63
May 2007	9.57	7.13	2.44
June 2007	7.72	3.65	4.07
July 2007	3.74	0.00	3.74
August 2007	0.89	0.00	0.89
September 2007	14.18	8.65	5.53
October 2007	21.51	9.76	11.74
November 2007	17.07	11.29	5.77
December 2007	19.40	13.39	6.01
January 2008	16.07	12.76	3.32
February 2008	14.41	10.21	4.21
March 2008	14.53	10.74	3.80
April 2008	6.78	6.02	0.77
May 2008	7.31	2.43	4.88
June 2008	2.61	0.00	2.61

Detailed investigation into underlying causes of this trend would be needed before conclusions were drawn; this was outside the scope of this study. The percentage rate would also be affected by the small (29 in total) staff numbers and may appear misleading. Nonetheless it is a cause for concern on a unit requiring high staff:patient ratios.

Staff Turnover

Table 4 – Month on month staff changes on the ITS: August 2005 – September 2006

6 months pre-refurbishment	2 months decant period	6 months post-refurbishment
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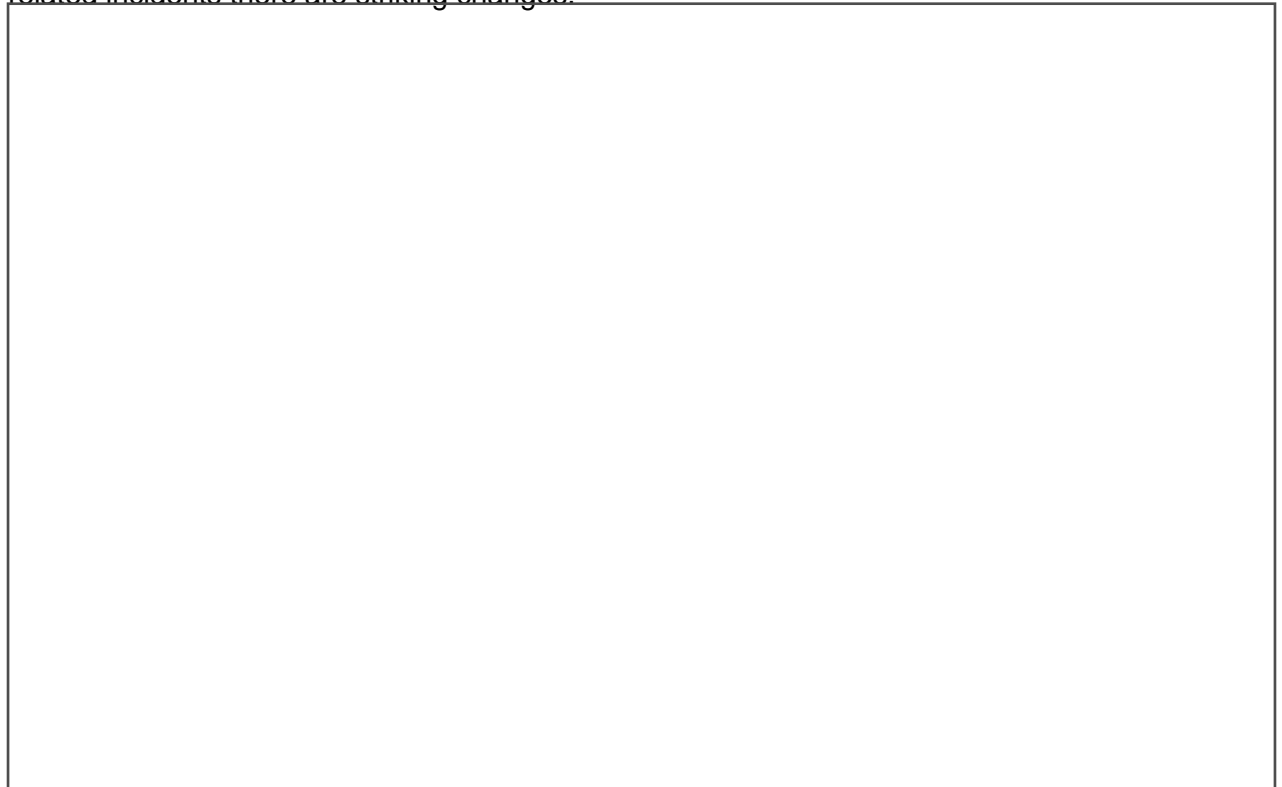
Month	Starters	Leavers	Month	Starters	Leavers	Month	Starters	Leavers	Aug.05	0	0																				
	Feb.06	1	0	Apr. 06	0	0		Sept.05	0	1	Mar.06	0	0	May 06	0	0	Oct.05	1	2	Jun. 06	0	0									
		Nov.05	0	0				Jul. 06	3	0				Dec.05	0	0							Aug.06	1	1	Jan.06	1	0	Sept.06	0	0

|0||

This does not suggest any particular pattern or links to the refurbishment. There was a longish period of 9 months (November 2005 – July 2006) with no Leavers at all (out of a total of 29 staff), suggesting a relatively stable staff group.

Adverse Incidents

These were looked at firstly by counting numbers of incidents pre and post refurbishment and then considering types of incidents more directly related to patients mental health which result in forms of violence – physical assaults, verbal abuse, need for staff to actually restrain and need to place patients in seclusion (see Figure 3). There were a total of 33 incidents pre-refurbishment and 38 post-refurbishment. In itself this suggests little difference, but looking at the violence-related incidents there are striking changes.



The numbers above the bars show the actual number of incidents

Figure 2 – ITS Patients Violence-related Adverse Incidents: August 2005 - September 2006

In the pre-refurbishment period there were 10 physical assaults on staff and 3 on other patients; post-refurbishment there were no such assaults on staff and only 1 on another patient. Verbal abuse incidents also declined but only from 3 to 1 in total.

This suggests the conditions which created situations leading to physical (and possibly, verbal) assault being ameliorated by the environmental changes.

However, there is high use of seclusion post-refurbishment and (apparently) none pre-refurbishment. This is surprising as seclusion is a common form of treatment for patients with

serious mental health problems. This data would require more detailed analysis, preferably over a longer period, to enable more definitive conclusions to be drawn. Other factors e.g. staff training, changes in clinical approach, may be having an impact.

The impact of clinical care

All patients had clear, strong views about the clinical care they received from ITS staff and found it impossible to divorce this from their views about the environment. They recognised they had been very ill when first admitted so that their initial impressions of the environment were hazy or non-existent. As their mental health began to improve so did their ability to appreciate the physical environment, *“they let me out (of the seclusion room) and showed me to my room ... I thought it were lovely, really good, brilliant”*.

Comments about staff were mixed in with comments about the environment. Some were ‘throw away’ comments on the end of other sentences, for example *“and all staff were brilliant”* or (talking about being allocated a nice room) *“I think they realised I needed a bit of extra care – the after care’s brilliant”*. There was a strong sense that ITS staff put themselves out in the ways they provided care or did unexpected things, *“... wonderful (staff) gave me a foot bath and massage and another day a manicure ... when you don’t expect it, it were lovely”*. This doesn’t mean ITS staff were perfect, of course - *“very good staff, some better than others but the majority were all right, very understanding”*.

Patients wanted to contrast their experiences of care provided by ITS staff, to care provided on other wards – in a very similar way to contrasting the different environments. Comments included *“on other wards we could just come and go, nobody seemed bothered to keep an eye on you”*, and *“I’ve been on Y, they (staff) don’t treat people right, have no respect and talk down to them”*. One patient elaborated on the idea of ‘respect’ in an unusual way, explaining that on other wards nobody respected the environment, for example there were always cigarette burns in the carpets, then suggesting the ITS was respected, partly because patients were aware that much thought, effort and money had gone into creating it, and partly because staff make such an effort with the patients. This patient also commented, *“it’s definitely a combination, it’s not just the environment, it’s also the staff – the staff as well because they respect you”*

Staff also gave views about some problems related to clinical care. The Ward Manager considered it helpful to have alternative space to use as low stimulus areas, but the Focus Group considered the whole environment was ‘low stimulus’ and as patients got better they became bored and frustrated. They suggested this could be helped by extra Occupational Therapy time to engage with patients for activities. Another long standing problem was reliance on co-operation from staff on other adult mental health wards. Examples were arranging for patients to use gym facilities or go on outings. This was needed because the ITS has a mix of very ill patients who could need constant observation by 2 staff at a time, and recovering patients who need other activities to promote their improving health.

5.0 CONCLUSIONS

The aim of this study was to examine what impact EHE design principles had in improving the patient experience on the ITS, from patient and staff perspectives. Has the research identified any other findings which are equally important to the patient experience?

Many benefits have been delivered for patients and staff. An environment has been created which is comfortable, homely and high quality, and unlike a usual mental health service inpatient ward. This environment needs sustaining e.g. by keeping it clean and tidy (Sugiyama, 1989). Patients all expressed surprise and delight at the levels of cleanliness, although staff seemed not to recognise this. Because patients appreciated the environment, they respected it and ceased damaging it. Nicoll (2004) proposed that if you create a nice environment people (with mental health problems) will treat it with respect. This is significant in mental health settings where patients often physically damage their surroundings, adding to service costs.

Patients also respected the environment because of the attitude of staff, which contrasted favourably with their experience of care elsewhere. These are parallel experiences and one seems unlikely to have much effect without the other. Medical intervention may also be important; patients identified an inability to appreciate their surroundings until recovering from the most acute phase of their illness.

Some design features were more important than others, e.g. space and how it is used. This supported patients having choices of where to go, what to do, and being able to receive visitors in safety and privacy. Staff could work with patients in a variety of quiet spaces without resorting to using the seclusion room. Staff also valued better availability of meeting rooms and similar facilities. However, reduced use of the seclusion room post-refurbishment is not supported by statistics. Further investigation would be required to draw conclusions about this. The overall feeling of space appears enhanced by use of light colours and availability of natural light, and noise levels seem reduced.

Patient perceptions about space may be linked to actual numbers of inpatients on a ward, or the staff:patient ratio. It was unclear how important this was and further research would be required. Is there some sort of optimum for these measures; how can this be determined? A change to smaller wards with more staff obviously has cost implications and the NHS is always required to prove value for money.

Other potential or perceived benefits of the changed environment were not confirmed by the secondary data. For example, there was little change in recruitment or retention, and staff sickness increased considerably in the 6 month post-refurbishment period. This challenges Lawson (2005) who suggested reductions or positive impacts on both measures; Lawson also noted seclusion dropping by 70% which certainly did not happen on the ITS.

Various studies (cited in Phiri, 2006) have linked noise, high temperatures, colours, room/furniture arrangements, crowding and high spatial densities to violence and aggression in Psychiatric settings. This study seems to confirm these in broad terms; patients did not mention high temperatures or colours, although staff recognised high temperatures as problematic. But adverse incident statistics confirm a significant reduction in the incidence of physical assaults on the ITS post-refurbishment.

Overall, treatment times reduced by approximately 20%. This is greater than the reduction of 14% in mental health units where the environment had been improved, noted by Lawson and

Phiri (2003).

It was very important to patients to look at the outside world and remain connected to it; this was achieved by views onto a roof top garden, and being able to look out of windows and observe people going about their day-to-day business. The ability to open windows and let in fresh air was also important. Staff did not share this perception, but felt strongly (and thought patients did) that there should have been an actual garden space patients could go into. The physical location of the ITS on the first floor, and paramount need for security, compounded this problem. These findings confirm other studies (cited in Phiri, 2006) which identify that windows are more than a luxury but provide vital contact with the outside, and that human beings recover better from stress if they can access natural environments or the outdoors.

Other features having importance were:

- . Artwork – specific large, multi-coloured/ textured pictures was liked by all. The Focus Group felt other artwork was unsuitable and a greater mix should be provided
- . Internal plants – patients appreciated these and staff had noticed some patients found it therapeutic to help care for the plants. Plants must be real (not artificial) to have this effect. Staff concerns about plants in pots being used as missiles had proved unfounded
- . Food – not a design feature, but patients saw high quality and range of choice as important
- . Temperature control – the Focus Group had concerns about the inability to keep the ward reasonably cool in hot weather

The Focus Group had significant concerns about their involvement in the EHE project implementation. Their views had been sought but not necessarily acted on and they did not understand the reasons for this – therefore they were not fully enrolled in the change and continued to express discontent many months later. Kotter and Schlesinger (1979) recommend a participative approach to change management, which may not have happened. Some basic infrastructure issues remained unresolved although only one of these (not upgrading bathrooms) had been noticed by a patient. The group perceived EHE design principles had been allowed to take over the refurbishment, by people who had limited understanding of the needs of the ITS. If SCT decides to roll out these design principles, such concerns should be addressed.

Notwithstanding these issues, staff all considered the environment extensively improved. It was a better, calmer and easier place in which to provide care and seen as generally liked by patients. However, this perception may be heightened by the numerous dislikes staff had about the pre-refurbishment environment. Would the improvements have been liked so much if the change were not so all-pervasive?

Patients also liked the new environment, particularly in comparison to other wards in which they had received care, but their perceptions may have been affected by the nature of the clinical care they received. Would they have liked the environment so much if their clinical care experience had been negative?

So, have we let in the light? Yes, but ... we could do it better by taking the findings of this study into account.

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Refurbishment completed

Refurbishment
started