

INCORPORATING THE CONCEPT OF CHOICE ARCHITECTURE INTO THE 3Ts DESIGN

1. INTRODUCTION

This report will investigate some of the key principles in relation to behaviour setting, choice architecture and explore how these can be incorporated into the 3Ts design.

1.1 Organisational objectives^{1, 2}

- To become a leading UK teaching hospital.
- To lead clinically and academically, striving for excellence in everything we do being known for the safety and quality of our clinical services.
- To offer the best and safest care.
- To reduce the incidence of MRSA and C. Difficile on our wards.
- Improve health and well-being at work
- Enable service and workforce transformation
- To build for the future.

Taking into account the organisational objectives certain desired employee behaviours have been identified. These include ensuring the interests of patients remain paramount at all times, maintaining a healthy workforce, striving for excellence, ensuring health and safety requirements are adhered to and fully complying with hygiene requirements.

Having identified the desired behaviours of employees in a hospital setting it is important to analyse how these behaviours can be specifically influenced through the 3Ts design. This report will focus on the following areas:

- Staff well-being and productivity
- Health and safety

2. HOW THE WORKING ENVIRONMENT CAN AFFECT BEHAVIOUR

The concept of ‘choice architecture’, ‘careful design of the environments in which people make choices’³ (Thaler, 2008) highlights a key opportunity to change or reinforce particular behaviours within 3Ts.

Choice architecture can be linked to Bandura’s (1999) ‘Social Cognitive Theory’ which looks at how people learn certain behaviours. It proposes that the development of a behaviour is achieved through the interaction of personal, behavioural and environmental factors.⁴ Building design is therefore a key component of setting and changing behavioural patterns.

The ‘Design with Intent’ Toolkit developed by Dan Lockton (2010) looks at how people can be encouraged or ‘nudged’ to make positive choices through enabling, motivating and constraining

¹ Brighton and Sussex University Hospitals NHS Trust (2010) Annual Report 2009/2010.
www.bsuh.nhs.uk/EasySiteWeb/GatewayLink.aspx?allId=327705

² Brighton and Sussex University Hospitals NHS Trust (2010) People and Education Strategy

³ Thaler, R, Sunstein, C (2008) Nudge – Improving Decisions about Health, Wealth and Happiness. Caravan. Yale University Press.

⁴ Bandura, A. (2001) Social cognitive theory: An agentic perspective. Annual Review of Psychology, [http://epsy.tamu.edu/uploads/files/Elliott/cpsy685/Bandura%20self efficacy%202001%20annurev.psych.52.1.pdf](http://epsy.tamu.edu/uploads/files/Elliott/cpsy685/Bandura%20self%20efficacy%202001%20annurev.psych.52.1.pdf)

particular behaviours through effective design. The toolkit allows groups to consider how specific behaviours can be targeted by looking at practical examples which are grouped into six lenses: cognitive, error proofing, architectural, security, persuasive and visual. Dan Lockton (2010) suggests “all design influences our behaviour, but we don’t always consciously consider the power this gives us to influence people.”⁵

3. RESEARCH EVIDENCE - HOW THE IDENTIFIED KEY BEHAVIOURS CAN BE INFLUENCED

3.1 Staff well-being and productivity

3.1.1 Improving eating behaviours at work

In order to enhance staff well-being and productivity a key behaviour to encourage is healthier eating at work. Encouraging this behaviour in the workplace is especially important as a third of employee’s meals and most snacks are eaten during work time (Uscreates, 2007).

A recent pilot initiative introduced at Breckland Council (2007) called ‘Experience Food at Work’ helped improve healthy eating behaviours. One of the main features of the initiative was an honesty fruit bowl system providing easily accessible fruit to the workforce. Please see Appendix 1. The honesty fruit bowl system is a cost effective method of providing fresh fruit to employees. The key here is that healthy snacks are at eye level, easily accessible from office desks and a key contributor to avoid ‘mindless eating’. One year after introduction this concept increased the number of staff who eat two or more portions of fruit at work to 72.4%. The number of employees who ate no fruit halved.⁶

A further study by Ulrich (2004) noted improved eating behaviour when dining furniture was rearranged. Ulrich suggests that ‘day rooms with comfortable movable furniture arranged in small flexible groupings should be made available’.⁷

Finally, Water UK (2006) highlight ‘good hydration contributes to workers’ health and safety. Even mild levels of dehydration adversely affect both physical and mental performance.’⁸ Goliath (2009) suggests using a three-pronged approach to enhance hydration including education, assessment, and implementation of best practices for encouraging fluid intake during the work day.⁹ Providing easy access to water coolers for all areas should be a key element of the 3Ts design.

3.1.2 Encouraging exercise in the workplace

One way of encouraging exercise in the workplace, which can be enhanced through effective design, is increasing stair-use. A key question to consider is ‘how do you encourage people to use the stairs rather than the lift?’

A recent NHS study (2008) found that the introduction of promotional posters slightly increases the number of people using stairways. The research carried out found that 7-25% of employees saw the promotional posters and of this 25% - 37% felt encouraged to use the stairs. Although this is a positive

⁵ Lockton, D (2010) Design with Intent Toolkit V. 0.9. Using design to influence behaviour. <http://architectures.danlockton.co.uk/2009/04/06/the-design-with-intent-toolkit/>

⁶ Uscreates (2007) Improving Eating Working Behaviours. http://www.uscreates.com/work/workplace_eating_behaviours/

⁷ Ulrich, R (2004) Evidence Based Environmental Design for Improving Medical Outcomes. http://muhc-healing.mcgill.ca/english/Speakers/ulrich_p.html

⁸ Water UK (2006) Wise up on water. Water in the workplace <http://www.water.org.uk/home/water-for-health/resources/wise-up---work.pdf>

⁹ Health watch (2009) Avoid dehydration in the workplace: Make drinking water accessible and appealing. http://goliath.ecnext.com/coms2/gi_0199-11906398/Avoid-dehydration-in-the-workplace.html

result it must be remembered that this is only 3-18% of the total sample (a 24-hour observational count).¹⁰

A further study by Brownell (1980) found that colourful signage at the stairs/escalator 'choice point' doubled stair use.¹¹ From this research it can be concluded that 'environmental interventions to increase stair-use may be best placed within a comprehensive workplace programme including health education and multi-component interventions using 'point of decision' prompts'' (Blake, 2008).

An additional prompt to enhance stair-use could involve the use of colour, drawing attention to the stairway. The piano staircase concept highlights the benefits of the use of colour. This project involved painting a staircase of a German subway exit black and white (Volkswagen, 2009). The use of colour increased the number of stair users and decreased the number of people using the adjacent escalator.¹² Framing the stairs within the 3Ts design with colour or artwork has the potential to increase stair use and enhance employee well-being.

3.1.3 Team working

Allen et al (2004) found that workplace layout can be used to increase collaboration and openness, thereby enabling improved organisational performance.¹³ Within 3Ts social behaviour and communication should be considered as an integral part in the development of the design.

Team working can be enhanced through the provision of suitable meeting rooms providing an environment which encourages collaboration through well designed and positioned furniture.

Another method to enhance team working is using goal setting methods providing staff with progress updates using personalised technology through departmental intranets. Providing this type of feedback at team meetings has the potential to enhance team working and improve team outcomes.

3.2 Health and safety

3.2.1 Encouraging alcohol gel usage

Research indicates that the main source of hospital acquired infections is contact specifically from healthcare workers (Bauer, 1990). It is well established that the hands of healthcare staff are in principle the cause of contact transmission (Larson, 1988).¹⁴

Ulrich (2004) suggests that it is not clear how much effectiveness can be attributed to the installation of more accessible sinks and alcohol dispensers. It is therefore essential to question other factors such as how the area is designed.

Alcohol dispensers should be placed in an easy access zone, grabbing attention and encouraging people to make the right choice. This could be through a brightly coloured zone using floor textures to act as a 'point of decision' prompt. Practical measures could also be taken such as installing a shelf so that staff can put their belongings down and disinfect their hands thoroughly. Designing 'disinfecting' areas using a channel or funnel system may also be a way of increasing compliance rates.

¹⁰ Blake, A, Lee, S, Stanton, T, Gorely, T (2008) Workplace intervention to promote stair-use in an NHS setting. *International Journal of Workplace Health Management*. <http://www.emeraldinsight.com/journals.htm?issn=1753-8351&volume=1&issue=3&articleid=1754045&show=abstract>

¹¹ Brownell, K (1980) Evaluation and modification of exercise patterns in the natural environment. *The American Journal of Psychiatry*. <http://ajp.psychiatryonline.org/cgi/content/abstract/137/12/1540>

¹² Volkswagen (2009) The Piano Staircase. <http://www.thefuntheory.com/piano-staircase>

¹³ Haynes, B (2008) The impact of office layout on productivity, *Journal of Facilities Management*, Vol. 6.

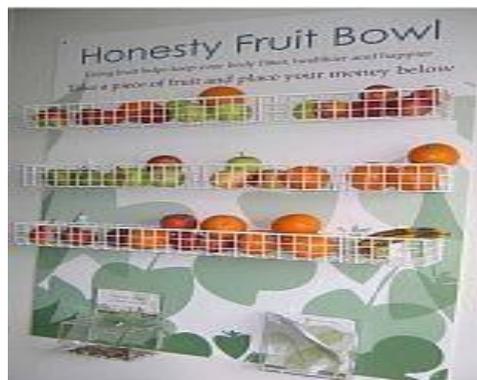
¹⁴ Ulrich, R (2004) The role of the physical environment. In the hospital of the 21st Century: A once in a lifetime opportunity. http://docs.google.com/viewer?a=v&q=cache:-7iH5rMJ_4MJ

Another method suggested in the 'Freakonomics' series is the use of the 'feedback and control' theory. Cedars- Sinai Medical Centre in Los Angeles reported significant increases in hand-hygiene compliance to nearly 100 percent by implementing this theory. A group of doctors were asked to put their hands in a sterile petri dish loaded with a spongy layer of agar, this was sent to a lab that returned images that "were disgusting and striking, with gobs of colonies of bacteria." The handprints were made into computer screen savers throughout the hospital (Dubner, 2009).¹⁵

3.3 Opportunities within the 3Ts design

Having considered the research evidence some key opportunities for behaviour change have been identified. The Design with Intent Workshop on November 19th 2010 will provide an opportunity to discuss these ideas further considering other desired behaviours and looking at more specifics such as how do we encourage the use of staff changing rooms, day rooms, promote the use of touchdowns in clinical areas and self registration kiosks? Finally, the Design with Intent Workshop will provide an opportunity to think 'outside of the box' in an interactive session, collating ideas for future development.

Appendix 1



¹⁵ Dubner, S (2009) Physician, Disinfect Thyself. Freakonomics the hidden side of everything. The New York Times. <http://freakonomics.blogs.nytimes.com/2009/11/24/physician-disinfect-thyself/>