

---

# Exploring the impact environments have on children and young people's experience of healthcare: a review of the literature



# Introduction



Introduction by Dr Alison Tonkin	3
What is an 'environment' and how can it impact on children?	4
Setting the scene	5
Executive summary	6

# **Exploring the impact environments have on children and young people's experience of healthcare: a review of the literature**

**Dr Alison Tonkin | March 2015**



This literature review was commissioned by NHS England to explore the impact environments have on children's experiences of care whilst accessing health service provision. There are pockets of evidence reflecting environmental impact within differing areas of practice, such as dedicated children's hospitals and departments, dental services and specialised units within larger district hospitals, and this review attempts to draw these differing experiences together.

Using examples from across the healthcare pathway for children and young people, this report seeks to clarify the significance of environmental factors on children's experiences. It also provides compelling evidence for advocating the participation of children and young people in contributing to the debate surrounding all aspects of the healthcare environment, from the initial planning and design, to the implementation and maintenance of suitable environments, and finally the evaluation of the environments they interact with.

## **Healthcare Play Specialist Education Trust**

The Healthcare Play Specialist Education Trust (HPSET), formerly the Hospital Play Staff Education Trust (HPSET) and the Hospital Play Staff Examination Board (HPSEB), is the Registration Body for Qualified Healthcare Play Specialists. The Trust has three objectives:

- Advancement of education with particular reference to the study of developmental and therapeutic play – including psycho-social care in hospital of children, young people and their families.
- Promotion of high standards of care through the advancement and improvement of the education and training of Healthcare Play Specialists.
- The undertaking of research into the care in hospital and in the community of children, young people and their families and the publication of the useful results thereof.

Copies of this literature review can be accessed through the HPSET website [www.hpset.org.uk](http://www.hpset.org.uk)

## **Acknowledgements**

Many thanks to Kath Evans and NHS England for commissioning and funding this project.

Special thanks also go to all the people and organisations who have contributed to this final report, which has gone far beyond the original, relatively simple brief (the acknowledgements section is necessarily very long).

## What is an ‘environment’ and how can it impact on children?

An environment is defined as: ‘The surroundings or conditions in which a person, animal, or plant lives or operates’  
(Oxford University Press 2015a)



Although this definition appears to be relatively simple and self explanatory, Skinner identified the need to break things down into simple bite-sized chunks to make tasks more manageable and to explore deeper meaning (Pound 2005).

Exploring the key words within the definition leads to a statement that shows how the environment can impact on the child surroundings – the things and conditions around a person or thing... Operate – control the functioning of... the environment ‘controls the functioning’ of the child by virtue of the ‘conditions’ that surround them.

The easiest way to illustrate this is to consider how each of the following environments above might make you feel if you were a child accessing the environment for the first time – and how you might operate within each of these surroundings.

Look again and add in factors such as the child’s age and developmental stage, their previous experiences, their personality, their state of health, the presence or absence of their parents. All of these factors are known to influence how the child will interact with the environment and impact on their experience of health care provision.

Children’s perceptions differ significantly from those of adults and therefore, the need to find out how children themselves would operate within their surroundings provides a valid reason for asking them, listening to what they have to say and then acting upon their contributions. Providing feedback and showing children what has been achieved as a result of their input acknowledges their time and effort and ultimately leads to better outcomes for all concerned (NCB and the Children’s Commissioner 2013).

## Setting the scene...

**“Fundamental changes are taking place in the way health services are planned and commissioned... As the statutory champion of children’s rights in England, I urge... the Department of Health, the new NHS, and their national and local partners to implement the commitment the UK made to listening to and acting on the views of children [Article 12] when it ratified the United Nations Convention on the Rights of the Child.”**

(Dr Maggie Atkinson, Children’s Commissioner for England, cited Blades et al 2013, p.3)

**“In the United Nation’s Declaration of Human Rights, the United Nations has proclaimed that childhood is entitled to special care and assistance.”**

(Office of the High Commissioner for Human Rights 1989)

**“Improving patient experience for children and young people is a subject which is close to many people’s hearts and which has not always received the attention and investment that it needs to make serious progress. Ensuring a positive patient experience for all groups is a strategic, commissioning and financial imperative for all. Patient experience is a fundamental component of how we should think about the quality of healthcare”.**

(Patient Experience Network 2013, p.7)

**“States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health... and to facilities for the treatment of illness and rehabilitation of health. States Parties shall strive to ensure that no child is deprived of his or her right of access to such health care services.”**

Article 24 from the United Nations Convention on the Rights of the Child (UNCRC)  
(Committee on the Rights of the Child 2013)

**“Children shall have full opportunity for play, recreation and education suited to their age and condition and shall be in an environment designed, furnished, staffed and equipped to meet their needs.”**

Article 7 from the EACH Charter  
(European Association for Children in Hospital 2014)

## Executive summary

According to Bandura's theory of reciprocal determinism, interactions between our thoughts, the environment and our behaviour constantly change the way we think and feel.  
(Allen and Gordon 2011)

### Overview

This demonstrates the influence of environmental factors on our experiences and provides a rationale for exploring the impact the environment can have when children and young people access health care provision.

Article 24 from the United Nations Convention on the Rights of the Child (UNCRC) identifies the need for State parties to acknowledge that 'all children have a right to good health and good quality health care' (Unicef 2008). In order to support States to achieve this, guidance has been published through General Comment 15, and point 52 encourages the adoption of child-sensitive approaches to health that reflect the differing life stages of children (Committee on the Rights of the Child 2013). The role of the environment is a central consideration for enabling differentiation according to the age and developmental stage of the children and young people accessing health care provision. So what is it about the environment that facilitates this differentiation and why should children contribute to the design, delivery and evaluation of the healthcare environments they inhabit?

From this point forward, the term "child" refers to an individual below the age of 18 years, in accordance with article 1 of the United Nations Convention on the Rights of the Child (Committee on the Rights of the Child 2013).

### Methodology

This research was originally framed as a literature review and the methodological tool used was a scoping study. Scoping studies allow complex areas that have not been comprehensively covered before to be reviewed holistically, through rapid mapping of key concepts across a broad range of evidence types and sources (Mays, Roberts and Popay 2001, cited by Arksey and O'Malley 2005, p.21). These sources included books, journal articles, reports, policy documents, websites, and newer digital formats such as blogs and Twitter. Information was also gathered from people actively involved in the practical aspects of the design, delivery and evaluation of healthcare environments, resulting in a number of case studies that emerge from the main review. Currency of the literature was limited to sources dating from 2004 onwards.

# Executive summary

## (continued)

### Key findings

- There is extensive coverage of healthcare design, the role of architecture and the ‘built design’, which occasionally incorporates the views of children. The integration of architecture, design and healthcare planning is becoming increasingly significant and the integration of the perspectives from architects, designers, healthcare professionals and children should inform environment related decisions.
- The evidence base that specifically looks at the impact of the environment on children’s experience of health care is limited, particularly for younger children, whose views are represented through adult proxies.
- Much of the reviewed literature recognises that the views of adults do not necessarily reflect the perceptions or perspectives that children identify as being of significance to them in terms of their experience linked to the environment.
- Children want to be involved in the design, delivery and evaluation of the healthcare environments they inhabit but need the support and facilitation of adults to make this happen, particularly for young children or those with complex needs.

- The environment will affect a child’s behaviour by virtue of the reciprocal influence it has on the child’s thoughts and feelings. Awareness of this can enable the environment to be manipulated to reduce the impact of environmental stressors.
- Developmental considerations need to be integrated into the planning, design, delivery and evaluation of all aspects of the environment. Developmental theory can be useful for ‘understanding’ children’s reactions and interactions with the environment.
- Innovative ways of capturing children’s experiences in relation to the environment should be considered, using examples of effective engagement. This may be from other sectors i.e. education and the early years age range. Effective engagement needs to utilise a variety of methods such as workshops, road shows, photography, the arts, as well as the use of technology, including social media.
- The voice of the child capturing the experiences in general facilities where environments are not specifically designed to cater for children is absent – aside of dentistry, this applies to virtually all primary care settings.
- There are recurring themes that consistently emerge through the literature, but the significance of these change as children grow older i.e. thematic design, colour and the proximity of parents.
- Design elements and design principles provide identifiable features that can be manipulated to produce differing effects within the environment. These features are significant within the initial design of a facility or during refurbishment. However, for pre-existing facilities, there are simple alterations that can be made to enhance the environment i.e. the use of ceiling tiles to reduce noise but also to provide visual stimulation and a means of distraction.
- The role of play and recreation is significant for all children, who want playful activities and facilities reflected throughout the whole environment. This needs to be appropriate to the age and developmental stage of the child and may require separate facilities to be provided i.e. play room for very young children, play facilities for children in middle childhood and chill out areas for young people that offer recreational activities.
- The role of nature is significant and if used effectively it can promote a healing environment.
- The role of art is significant, particularly as a means of distraction and initiating conversation. It covers a whole range of creative activities such as music, dance, sculpture, art projects and photography.
- Children need opportunities to socialise while maintaining their privacy. Although emphasis is put on the needs of young people, younger children also need similar opportunities that reflect their developmental levels.
- For children who stay in hospital, sleep can be problematic due to noise levels that occur as a result of clinical activities. There are mixed messages about room occupancy with some children preferring single occupancy while others prefer multiple bay provision. Separation according to age range is more significant than gender and where possible, settings will take children’s preference into account.
- There is a move away from the hospital as the central point of health care delivery and the emphasis on moving services into the community provides both challenges and opportunities.

## Executive summary (continued)

- Extensive documentation and guidance that clearly identifies the key features of the environment and how they can be evaluated exist and need to be utilised, particularly in facilities that do not specifically cater for children.

### Limitations

Information covering a broader range of professions and provision was anticipated. Aside of imaging and dentistry, information relating to the impact of the environment on children's experiences was mainly restricted to hospital settings.

Performing a scoping study worked well but it meant the depth and range of information was excessive and not always relevant.

The time range of 2004–2015 was effective and reflected the main activity within the sector in recent times.

### Conclusions and Implications

It is important to use the environment as a means of positively engaging and empowering people, as the traditional role of the hospital as the focal point of healthcare delivery changes (European Healthcare Design 2015). Although 'the hospital' will still deliver specialised medical services, the design and delivery of services are being focused on the needs of the patients, with a greater emphasis on local, community based services (Department of Health 2013e).

This is particularly important for children, as 'integrated care closer to home' becomes the ambition, particularly through the enhancement of children's community nursing teams (Royal College of Nursing 2014).

Children's perceptions and the relative importance they place on environmental factors differ considerably from adults who often 'represent' their experiences. However, children's views are rarely sought despite their obvious capability, as demonstrated when they are given the opportunity to express their opinions and appropriate data collection techniques are used to capture their views.

Given that children want to participate in the design, delivery and evaluation of the healthcare environments they inhabit, more needs to be done to empower children to integrate their experiences into all aspects of environmental provision.

### Recommendations

- Research needs to capture the views of children's experiences of healthcare environments in primary care settings (dental services for children lead the way in this respect and can provide useful evidence of how this can be achieved)
- Research needs to be undertaken to elicit the views of younger children as their voice in the literature is noticeably absent
- Consideration needs to be given to the provision of facilities that reflect the distinct needs of the 'middle childhood' age range
- Integration of design and architectural research needs to be integrated with the perspectives of children and healthcare professionals for the provision of healthcare services, particularly as services move into the community
- Play and recreation facilities are seen as significant by children across the age range and need to be 'reflected throughout the environment'. This is particular important for children who are treated in general facilities that are often geared towards adult needs
- There are relatively simple and inexpensive ways in which environments can be altered to reflect children's interests and the principles of a healing environment. These need to be shared more broadly.

# General background to the literature review (the ‘technical bits’)



<b>Case study 1 – The importance of providing an environment that promotes play and recreation within the healthcare setting</b>	10
The historical context of healthcare for children	22
Children's healthcare in the NHS	23
Children's rights and the link to healthcare environments in practice	24
Why should children's views and experiences be included?	25
Methodology for conducting the review of the literature	26
Using the 'scoping study' tool for reviewing the literature	27
Laying the foundations – three significant documents from the previous decade	28
Tools for reviewing children's healthcare facilities	30
How do environments impact on children?	31
Environmental variables	33
Healing environments	35
Environmental influences and how their significance varies with age	36
Developmental considerations	37
Addressing the needs of young people	39
Theoretical perspectives – three perspectives that link to the environment	40
The need for play and recreation	44



Case study 1:

# The importance of providing an environment that promotes play and recreation within the healthcare setting

**Rachel Fitzpatrick** | Hospital Play Team Manager  
Chelsea and Westminster Hospital



Case study 1:

## Delivering quality play opportunities

“

We have come a long way  
since the old days of barren  
environments.”

In 2006, the National Association of Hospital Play Staff published *Play for Health: Delivering and auditing quality in Hospital Play Services*. Written by Judy Walker (2006) it provides a dedicated audit tool which can be used to assess and evaluate the provision of play services within healthcare settings. Dr Patricia Hamilton (President of the Royal College of Paediatrics and Child Health) wrote the forward for this publication and stated ‘we have come a long way since the old days of barren environments’ and goes on to advocate the need to respond to the Healthcare Commission’s findings that previous inspections of children’s services identified many hospitals were ‘not good at providing child friendly environments or in promoting play services’ (cited Walker 2006).

Today, this tool continues to be used as an integral part of gauging the quality of the environment specifically relating to play service provision. The following slides provide examples from Chelsea and Westminster Hospital NHS Foundation Trust of how ‘clear and measurable criteria for the structure, processes and outcomes’ (Walker 2006, p.9) of play service provision can promote a child friendly environment.

Much of the content within this case study features on the Play Services section of the web site – It is included here, along with the featured images with kind permission from George Vasilopoulos, Web Communications & Graphic Design Manager.

Case study 1:

## We use play to...

- Create an environment where stress and worry are reduced.
- Prepare and enable children to understand treatment, illness and the hospital itself – including anxious visiting brothers and sisters
- Promote the use of coping methods between children, their parents and staff during medical procedures
- Provide outlets for feelings of anger, fear and frustration
- Contribute towards assessment and diagnosis
- Help children regain confidence and self esteem



Image courtesy of Chelsea and Westminster Hospital

Case study 1:

## Healthcare environments should reflect play opportunities

Play is a universal language for children and the provision of play opportunities tells the child that life as they know it, can continue, even within the hospital environment.

### We provide...

- Familiar games and toys to help your child to feel at home in hospital
- A range of play and art and craft activities in the Play Rooms on the wards
- Toy boxes are available at the bedside in the evenings when the Hospital Play Specialist is unavailable
- A range of toys and group activities are available in the waiting area
- in Outpatients
- Physical and messy play that allows children to let off steam and supports their recovery



Image courtesy of Chelsea and Westminster Hospital

Case study 1:

## Play can create environments where stress and worry can be reduced

When children and their families visit a hospital, this can induce feelings of stress and worry for both the child and their parents. Children will often 'wallow' in play and this can 'distract' attention away from a child's illness and as a result, will help support children as they cope with illness and hospital life.

Parents also enjoy the 'normality' that play provision provides, which in turn will help to reduce their stress and worry – both of which are easily transferred to the child.

Play can also be used to engage siblings while consultations occur, and can provide a safe medium for siblings to explore their feelings and devise coping strategies to meet their own needs.



Image courtesy of Chelsea and Westminster Hospital

Case study 1:

## Play can stimulate the senses

The play team recently worked with Rhino UK to integrate sensory equipment into a number of wards and waiting areas which helped to create a calming environment and also provide a means of distraction.

“

We fitted the treatment and assessment rooms with interactive fibre optic ceilings and Solar LED projectors for ultimate distraction and stimulation whilst undergoing procedures.”

The play rooms and outpatients waiting room was fitted with our popular interactive projection floor and wall systems complete with activity tables and therapeutic resources from our JungleClean infection control friendly range. We also made sure the areas were accessible for all ages and abilities by designing special multi sensory corners and areas for quiet relaxation and stimulation within the ward play rooms” (Rhino 2014).



Image courtesy of Chelsea and Westminster Hospital

## Case study 1:

### Therapeutic play

Play on an individual level can provide support for children who may be experiencing difficulties coping with an examination, illness or treatment.

#### Play can be used to:

- Prepare – Medical play preparation to help your child understand their illness and treatment.
- Distract – Use of distraction therapy using play so that both you and your child can cope better during treatment.
- Post procedural play – enables children to make sense of what has happened and explore their feelings in a safe and secure environment.



Image courtesy of Chelsea and Westminster Hospital

Case study 1:

## Making play age and developmental stage appropriate

The following slides cover the three age ranges identified as significant in relation to children's developmental stages:

- Babies and young children (babies to children up to the age of five years)
- Middle childhood (six to eleven years of age)
- Young people (12 to 17 years of age)

In each case, consideration is given to the key features that influence children's feelings, which ultimately link with the environment which influences children's subsequent behaviour.

The variations in age and consideration particular to each age range are covered in detail within the web site... please use the following link for more detailed information: <http://www.chelwest.nhs.uk/services/childrens-services/play-service/common-concerns-children-have>

## Case study 1:

### Children under five years of age

Children of this age are particularly vulnerable to hospital experiences because they are very young, they cannot communicate their needs clearly and they have limited ways of coping.

Too many new sights, smells and sounds can cause particular stresses due to the strangeness of the hospital environment. Therefore, promoting opportunities to engage calming sensory experiences can be particularly useful for this age range.

This can also include opportunities for mothers who are breast feeding, as for children within this age range, children are closely affected by their parent's emotions and ability to help them to understand medical experiences and explanation of illness.



Image courtesy of Chelsea and Westminster Hospital

## Case study 1: Six to eleven year olds

We tend to think this group of children are able to cope better due to their age and developmental skills. However, there is evidence to suggest that within a hospital setting they may have hidden worries which are not recognised because we make assumptions over these children's abilities to cope and to talk to us about their feelings.

Although the understanding of how the body works and illness will have developed through school work—talking with friends, overhearing adult conversations etc – there is still much room for fantasy and confusion. A common fear for some children in this age group is that of bodily mutilation, and that hospitals are as seen in the dramatic scenarios represented on TV (for example, Casualty or animal rescue programmes).



Image courtesy of Chelsea and Westminster Hospital

## Case study 1: Young people

This group can have varied needs depending on the nature of their illness and their specific background. Many young people are either emergency admissions caused by complex behaviours, while others may also be admitted for acute treatment for chronic health problems.

They can have developmental needs ranging from those similar to that of a younger child, or those verging on adult needs as these teenagers seek their own independence and rights for privacy and confidentiality away from their families.

Young people will engage with recreational activities such as playing games or creative opportunities, including drawing and art work – particularly if this is then displayed within the environment.



## Case study 1:

### Promoting the value of play

Key points have been raised in this presentation to highlight the benefits of hospital play, and the importance of providing a welcoming and engaging environment for children and young people when they encounter healthcare facilities, either as a patient, as a visitor with their families or when they visit their friends.

The majority of play provision is delivered by Health Play Specialists using specialised play to support children during their hospital experience, through age-appropriate resources across a range of paediatric areas to provide a child centred environment.

We have developed a comprehensive play policy to provide guidance to enable all staff to deliver excellence through play for all the children and young people that we work with.

#### References

Chelsea and Westminster Hospital (2015) Play Service: Concerns children have. Online: Available: <http://www.chelwest.nhs.uk/services/childrens-services/play-service/common-concerns-children-have>

Accessed: 17 February 2015.

Rhino (2014) Chelsea & Westminster Hospital Sensory Corners & Waiting Room Activities. Online. Available: <http://www.rhinouk.com/casestudies/chelsea-westminster-hospital>

Accessed: 17 February 2015.

Walker, J. (2006) Play for Health: Delivering and Auditing Quality in Hospital Play Services. London: National Association of Hospital Play Staff.



## The historical context of healthcare for children

“

They would fill the wards with unwholesome air (children were considered to be a reservoir of disease) and their crying would disturb other patients.”

The earliest ‘centres for healing’ date back to 4000 BCE and have traditions in both the Greek and Roman Empires (Science Museum 2014). However, the development of buildings dedicated to the care of people through medical provision are thought to have originated around 1700 years ago in Europe and the Middle East, associated with the routes of pilgrimages. The Christian and Islamic religions both provided major contributions to the development of medical care and this persisted into the Middle Ages. At this time, medical care started to be separated from religious traditions and medical personnel began selecting patients as opposed to this being done by lay subscribers (Science Museum 2014).

Britain lagged behind other European countries in the provision of welfare for children and in the 1720’s and 30’s the death rate of children in London was 74% (Harris 2014). It wasn’t until 1741, that children from seriously disadvantaged backgrounds were recognised as legitimately in need of care and The Foundling Hospital admitted children who had been deserted to ‘educate and maintain them’ (Harris 2014). However, this was more about ‘welfare’ than the treatment of childhood medical needs. George Armstrong did open The London Dispensary in 1769, which provided outpatient treatment for children but this closed after a few years due to a lack of funding. Despite advances in the provision of specialised children’s hospitals in major European cities by the end of the 18th century, little changed in Britain in terms of looking after children and this continued over the course of the next century (Hawkins 2010). Armstrong (cited Hawkins 2010) provided reasons as to why children should not be cared for in hospital including:

“They would fill the wards with unwholesome air (children were considered to be a reservoir of disease) and their crying would disturb other patients.”

This may explain why, in a survey conducted in 1843, there were only 26 recorded cases of children under 10 years of age being cared for in all the London hospitals, despite 21,000 children dying in London that year (Baldwin 2010).

Baldwin (2010) goes on to explain that children were assumed to be ‘expendable’ and there was limited, if any, provision for children even when seriously ill. This began to change in 1852, when Great Ormond Street Hospital was opened as the first dedicated in-patient hospital for children with a total of 10 beds (Great Ormond Street Hospital for Children NHS Foundation Trust 2014).

Although there was initial suspicion from parents and the medical profession alike, once the hospital began to build its reputation, other children’s hospitals followed in provincial centres such as Norwich, Manchester, Edinburgh and Liverpool by the end of the 1850’s (Hawkins 2010). By 1901, there were 31 specialist children’s hospitals treating 21,000 inpatients and 250,000 outpatients each year (Hawkins 2010). However, this provision was for children living in relative poverty.

For example, Nottingham Children’s Hospital opened in 1869 as a charitable institution, and its aim was to enable the ‘reception, maintenance and medical treatment of children of the poor under ten years of age’ (University of Nottingham n.d.). The provision of healthcare for children remained in the hands of charitable benefactors and voluntary hospitals until the introduction of the NHS in 1948.

## Children's healthcare in the NHS

The National Health Service (NHS) was introduced in 1948 and the guiding principle was the provision of 'good healthcare for all' that was 'free at the point of need.' For the first time, all children, not just those from poverty stricken backgrounds or those with welfare requirements were eligible to receive care. (NHS Choices 2013b).

The services of General Practitioners (GPs), opticians, dentists and pharmacists were integrated with those of hospital services (Rivett 2009). District Hospitals, providing care for the local geographical area offered general facilities for the community, with links to university hospitals offering more complex services (Rivett 2009).

Within these services, children 'fitted' into the system and specialist provision that was tailored to their unique, developmental needs was not routinely factored into the provision of care. For example, parents could only visit their children for one hour at the weekends and children were often cared for in adult wards with little if any information about what was happening or why they were there (NHS Choices 2013b).

Awareness of children's specific needs often came through specific campaigns such as James and Joyce Roberson who, in 1952 highlighted the distress caused to children when they were hospitalised (Dinnen and Ware 2014), resulting in the gradual introduction of daily visits in 1954 (NHS Choices 2013b). Active campaigning for the recognition of children's needs, particularly in hospital, became a focal point of innovation and change, with the development of Mother Care for Children in Hospital' by mothers in Battersea, which later became Action for Sick Children (Dinnen and Ware 2014), a charity which now has over 50 years of experience in all aspects of healthcare, 'whether in hospital, in the community or at home and from national policies to individual family cases' (Action for Sick Children 2015).

Today, there are 14 major children's medical centres in the UK (Newcastle upon Tyne Hospitals NHS Foundation Trust 2015a). There are four specialist children's hospitals in England – Birmingham Children's Hospital, Great Ormond Street Hospital in London, Alder Hey in Liverpool and Sheffield Children's Hospital (BBC News 2012). Many regions within England also have services dedicated to the care of children, such as the Royal Manchester Children's Hospital which has

the largest single site hospital for children in the UK (Central Manchester Foundation Trust 2105) or Leeds Children's Hospital which 'looks after youngsters from birth to the age of 16 living right across Yorkshire and beyond' (The Leeds Teaching Hospital Trust 2015).

However, for many children, healthcare provision is still based in adult-led general facilities, despite NHS Estates (2004b) identifying the need, where possible, for children to be treated and cared for in dedicated children's facilities. This can raise issues in terms of appropriate care, which can result in variations in the quality of outcomes that need to be addressed (The Society and College of Radiographers 2015a). This may also contribute to the 'unwarranted' variations in the healthcare outcomes for children across the regions and the NHS Atlas of Variation in Healthcare for Children and Young People has been produced to 'highlight opportunities for commissioners and clinicians to improve health outcomes and minimise inequalities' (National Child and Maternal Health Intelligence Network 2014).

In recent years, the provision of healthcare services that recognises the unique needs of children has been advanced through the United Nations Convention on the Rights of the Child (UNCRC) (Office of the High Commissioner for Human Rights 1989). In November 2014, the UNCRC celebrated its 25th anniversary, and justly claimed that: "By changing views of children – from passive objects of care and charity to human beings with a distinct set of rights – the Convention has helped effect remarkable gains for the world's children" (Unicef 2014).

## Children's rights and the link to healthcare environments in practice

The Committee on the Rights of the Child (2013, p.3) promotes “the importance of approaching children’s health from a child’s rights perspective” through the UNCRC.

Although the Committee identifies article 24 as an ‘inclusive right’, it also advocates a holistic approach to health, requiring utilisation of other rights from the UNCRC to enable fulfilment of article 24. These include:

Article	Focus on the healthcare environment	Examples of effective practice
3	All organisations concerned with children should work towards what is best for each child.	One of the NHS Constitution’s guiding principles is it ‘must’ respect individual’s human rights (Department of Health 2013c). Community and home environments are increasingly being recognised in policy as the best place for children to receive health care (Royal College of Nursing 2014, Murphy 2008)
6	All children have the right to life. Governments should ensure that children survive and develop healthily.	With advances in medicine and health service provision, children are now surviving previous life-threatening diseases and living longer with chronic conditions (Royal College of Nursing 2014, Kovacs Silvis 2013a, Murphy 2008).
12	Children have the right to say what they think should happen when adults are making decisions that affect them, and to have their opinions taken into account.	Children’s experiences and views often differ from those of the adults who speak on their behalf (NHS England 2014, Livesley and Long 2013, Sfandyari Fard 2013, Alder Hey Children’s NHS Foundation Trust 2013, Ekra and Gjengedal 2012, Söderbäck et al 2011, Fletherceret et al 2011, Adams et al 2010, Birch et al 2007, Curtis 2007, Said 2007, Dalkeet et al 2005). The Children’s Commissioner for England clearly identifies that children want to be actively involved in decisions but notes that this is not common place (Atkinson, cited Blades et al 2013).
13	Children have the right to get and to share information, as long as the information is not damaging to them or to others.	Children want to know what is happening (Flletcher et al 2011) however they also want medical staff to take the lead on occasions (Robinson 2010). Older girls want to read magazines but due to the ‘adult’ content are not always allowed (James et al 2007).
15	Children have the right to meet together and to join groups and organisations.	Socialisation is important for children of all ages (van der Riet et al 2014, Alder Hey Children’s NHS Trust 2012, Coyne and Kirwan 2012, Ford 2011). Socialising and talking to peers and their family are often the best thing about their hospital experience (Lambert et al 2013).
16	Children have a right to privacy.	Children of all ages need privacy (Robinson 2010) not just older children (Curtis 2007). Rooming arrangements can cause difficulties if multiple occupancy (Farjouet et al 2013).
31	All children have a right to relax and play, and to join in a wide range of activities.	Children want to be occupied through play, reading, talking, telling jokes and watching TV (Jensen et al 2012, Fletcher et al 2011, Ford 2011) and playing music (James et al 2007) and these should be integrated throughout the hospital environment (Lambert et al 2013).
36	Children should be protected from any activities that could harm their development.	Kennedy (2001, cited NHS Estates 2004b) identified how inappropriate healthcare could cause harm to children. Hospital environments can be detrimental to children’s well-being (Murphy 2008). There is tension between empowering children but at the same time, protecting them from harm (Söderbäck et al 2011, Robinson 2010). Children find intravenous lines and having blood taken frightening (Jensen et al 2012, James et al 2007).

## Why should children's views and experiences be included?



There is a long history of advocacy for 'patient centred care' that reflects individual patient needs and preferences within the NHS and over the past twenty years, this has been a key policy goal for senior policy makers and politicians (Foot et al 2014).

The King's Fund have recently published People in control of their own health and care: The state of involvement. Within this, Foot et al (2014, p.6) note that patients are not as involved as they want to be 'yet when they are involved, decisions are better, health and health outcomes improve, and resources are allocated more efficiently'. Within this publication, it is interesting to note that there is no specific mention of the involvement of children as a defined patient group, although many of the recommendations are equally applicable to children.

The population of England includes over 2 million citizens under the age of 18 years and Atkinson (cited Blades et al 2013, p.2) expresses disappointment about the lack of involvement of this distinct group of health service users, especially as they clearly state want to be involved (Livesley and Long 2013, van Staa et al 2011).

The necessity of gathering feedback from individuals appears to be obvious, especially considering that 'the individual patient is the one common denominator across all their care experiences, making them a natural source for information across healthcare boundaries, health professionals, services and care settings' (O'Hara and Isden 2013). This is particularly important for children as the portrayal of their experiences and the relative importance of those experiences often differ from those of adults who speak on their behalf (NHS England 2014, Livesley and Long 2013, Lambert et al 2013, Alder Hey Children's NHS Foundation Trust 2013, Ekra and Gjengedal 2012, Day 2012, Adams et al 2010, Birch et al 2007, Dalkeet al 2005).

For a comprehensive overview of the policy framework advocating the inclusion of the voice of the child, including the child's experience of health service use, see Appendix C (Blades et al 2013).

## Methodology for conducting the review of the literature

“

Whilst many organisations are doing something to improve experience for children and young people there is still too much focus on ‘talk’ and not enough on action...”

The original brief for this project was to conduct a literature review exploring how the environment can impact on children and young people’s experience of healthcare provision.

In 2013 the Patient Experience Network prepared a report on behalf of NHS England entitled ‘Improving Patient Experience for Children and Young People’ which provided an overarching view of children and young people’s experiences of healthcare provision in the NHS, identifying that:

“Whilst many organisations are doing something to improve experience for children and young people there is still too much focus on ‘talk’ and not enough on action. Millions of £’s are spent on reports, targets, pledges, discussions and initiatives, and considerably less on identifying existing areas of practical best practice in patient experience and then sharing it. Why re-invent the wheel?” (Patient Experience Network 213, p.11).

Therefore, in an effort to review as much of the literature as possible and review existing areas of good practice, the methodological approach chosen to conduct this literature review was a scoping study. Scoping studies allow complex areas that have not been comprehensively covered before to be reviewed holistically, through rapid mapping of key concepts across a broad range of evidence types and sources (Mays, Roberts and Popay 2001, cited by Arksey and O’Malley 2005, p.21). These sources included books, journal articles, reports, policy documents, websites, and newer digital formats such as Twitter. Information was also gathered from people actively involved in

the practical aspects of the design, delivery and evaluation of healthcare environments, resulting in a number of case studies that emerge from the main review. Examples of good practice were also able to provide significant evidence in terms of children’s perceptions of what constitutes an effective environment and how such features can be used to enhance the patient experience of health service provision.

Using the ‘scoping study’ tool for reviewing the literature

Arksey and O’Malley (2005) provide a five stage framework for conducting scoping studies and this was used as follows...

### **1. Identifying the research question**

How does the environment impact on children’s experiences of healthcare provision?

### **2. Identifying relevant studies**

A systematic approach was essential for the identification and collation of data, as a variety of sources were searched (Aveyard 2010). Searches for journal content were conducted via CINAHL and the platform Science Direct, using key words and search terms in isolation or combined. Key words included: children, young people, patient, parents, environment, experience, design, surroundings, buildings and architecture, as well as a range of roles within the NHS i.e. nursing, imaging, physiotherapy, occupational therapy and dentist.

## Using the ‘scoping study’ tool for reviewing the literature

The database Maternity and Infant Care was also searched but this yielded no results. References cited in reviewed articles led to a rich source of additional literature, which were subsequently accessed.

A variety of web based resources yielded significant sources of information. For example, hospital web sites from across the English regions, national government websites for reports and policy statements and dedicated web sites covering key themes such as the Medical Architecture Research Unit (MARU), NHS Property Services, as well as American sites such as The Center for Health Design.

### 3. Study selection

Scoping studies do not necessarily evaluate or attempt to generalise the findings of the literature identified through the search process (Randall and Hallowell 2012). The only limiter was the time frame – sources of information from 2004–2015 were used. The rationale for this was the perceived change in the ‘form and function’ of hospitals from 2004 onwards (Gesleret al 2004) which coincided with the introduction of the National Service Framework (NSF) for Children, Young People and Maternity Services by the Department of Health. Three significant documents were published at this time and provide the historical context for this literature review.

### 4. Charting the data

Almost all the accessed information was electronic in nature and therefore it could be easily categorised and filed according to thematic relevance on a data storage device.

### 5. Collating, summarizing and reporting the results

The literature and findings relating to examples of good practice were grouped thematically and used as focal points for differing areas of the report

format. As the scoping study progressed, key themes emerged and additional case studies that provided further explanation/detail were generated as a means of enhancing the presentation format.

### Limitations

When this review was planned, it was envisaged that information relating to specific professions such as imaging, physiotherapy or occupational therapy would be covered. However, aside of imaging, which allows non-member access to its children’s resources on the professional website, it was not possible to access any resources. The same applies to specific settings such as schools and virtually all areas of primary care. It is highly probable that research covering environmental impact exists within these areas, but it was not accessible through the methods used to conduct this scoping study.

The amount of information that could be accessed through generic search engines such as Google was vast and inconsistent. Re-visiting ‘on the off-chance something new would come up’ using the same search terms proved to be an effective strategy but this was not time efficient or well structured.

To ensure currency of information the time period was limited to 2004–2015. This time period was effective and reflected a period of renewed interest in the building of new facilities for children.

## Laying the foundations

### Three significant documents from 2003–2004



#### *Getting the right start: National Service Framework for Children*

Standard for Hospital Services

#### **Getting the right start: National Service Framework for Children Standard for Hospital Services**

(Department of Health 2003)

In 2003 Alan Milburn, the Secretary of State for Health, provided the Foreword for this document and identified the need to utilise the child's point of view when hospital services for children were being designed. The stated aim for the Standard for Hospital Services for Children included the provision of 'child-friendly and safe environments' and that these should cover all departments and services that cater for children and young people across the age range. It should also integrate service delivery with other agencies to ensure a coordinated delivery of services throughout the child's healthcare journey (Department of Health 2003). It was also acknowledged that up to this point 'many facilities had been designed with little acknowledgement of the differing needs of small children, older children, adolescents, parents and carers' (NHS Estates 2004b, p.3).

Part 3 of the Standard specifically covered the Quality of the Setting and Environment and provided a clear rationale for the provision of 'child-friendly hospitals' that were safe and healthy places for children. The provision of a 'child-friendly and safe environment' identified the need for buildings that are "accessible, safe, suitable and child and family friendly" (Department of Health 2003, p.36). However Curtis (2007, p.16) notes that the context of what constitutes a 'child-friendly' environment at this time was ambiguous and ill-informed'.

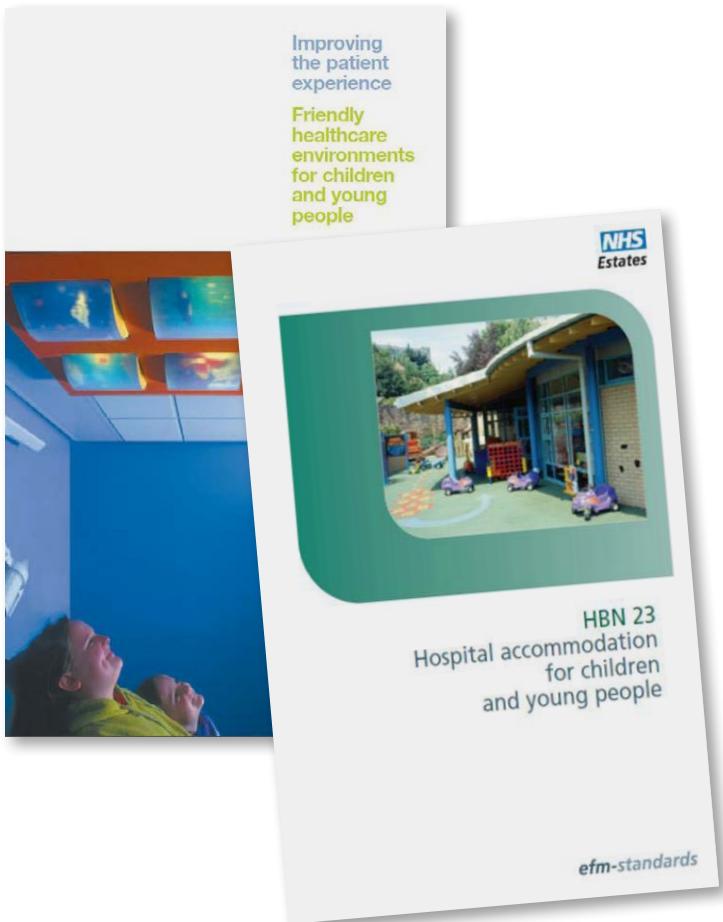
"Improving the Patient Experience – Friendly healthcare environments for children and young people" (NHS Estates 2004a) was published alongside the NSF for Children Hospital Standard and provided definitive guidance with regard to what constitutes a friendly, welcoming healthcare environment. This was to be used for all subsequent new builds or refurbishment of children's facilities (Department of Health 2003) .



**Improving the Patient Experience – Friendly healthcare environments for children and young people."**

## Laying the foundations

### Three significant documents from 2003–2004 (continued)



#### **Improving the patient experience: Friendly healthcare environments for children and young people** (NHS Estates 2004a)

This document still provides the definitive guide to the core principles for the provision of 'a friendly environment for any child who accesses healthcare facilities, whether as a patient or as a visitor' (NHS Estates 2004b, Executive summary). It also notes that 'although reference is made frequently to the hospital, the broad principles set out in this guidance are applicable to any health or social care setting' (NHS Estates 2004a). Key considerations included within the report included 'security, safety, privacy and dignity, catering, rest and sleep, play, education, childcare and youth work. The benefits of artwork in the hospital are also emphasised' NHS Estates 2004a, p.6).

Advocacy for seeking and using the voice of the child was also explicitly made in relation to the built environment... and this document includes an excellent chapter on how planning teams were able to elicit and use children's voices within a variety of projects. It also provides an excellent chapter on 'Sense-sensitive design'.

#### **HBN 23 Hospital accommodation for children and young people** (NHS Estates 2004b)

'The main aim of the document was to 'ensure that children are given the best possible care and treatment in an age-appropriate way and a suitable environment' (NHS Estates 2004b, Executive Summary). Designed to be read in tandem with Improving the patient experience: Friendly healthcare environments for children and young people (NHS Estates 2004a), together these two documents called for architects and planners to consider, when designing healthcare facilities to provide an environment that could 'alleviate fear and anxiety, maximising security and safety, reducing boredom, and creating a healing environment' (NHS Estates 2004b, p.3).

# Tools for reviewing children's healthcare facilities



In 2007 the Department of Health disseminated a Research and Development project undertaken by the University of Sheffield School of Architecture (2007) which was commissioned in 2004 by NHS Estates. This project provided an exemplar for two tools – ASPECT and AEDET Evolution that can be used to assess environmental aspects of healthcare buildings. This project used photographs to clarify what the statements used within both these tools referred to. AEDET Evolution (NHS Estates and Facilities 2008a) is 'a benchmarking tool used to assist Trusts in measuring and managing the design quality of their healthcare facilities'. Descriptions of significant features of the environment highlight elements that contribute to the experience of using healthcare facilities, particularly in relation to 'impact, build quality and functionality' NHS Estates and Facilities 2008a).

ASPECT 'A Staff and Patient Environment Calibration Tool' (NHS Estates and Facilities 2008b) is Based on over 600 pieces of research, and provides a tool for exploring the way the healthcare environment can impact on levels of satisfaction and health outcomes from both the patient and staff perspective. ASPECT can be used as a 'stand – alone tool' or a supporting tool when using AEDET Evolution, addressing eight key areas:

- 1. Privacy, company and dignity**
- 2. Views**
- 3. Nature and outdoors**
- 4. Comfort and control**
- 5. Legibility of place**
- 6. Interior appearance**
- 7. Facilities**
- 8. Staff**

Research undertaken by James et al (2007) funded by an Economic and Social Research Council (ESRC) grant, provides an enhanced version of the ASPECT tool called ACE ASEPECT: Children's Environments (Curtis et al 2007a). Expanding the original eight categories identified within ASPECT to 10, this tool can be used for assessing hospital environmental characteristics that were considered to be important to children themselves – as defined through their research with 255 children across the age range and across three different types of healthcare provision.

Within ACE, Privacy, company and dignity is redefined and explores:

#### **Age-related**

[does the environment reflect specific age ranges appropriately?]

#### **Social space**

#### **Privacy and personal space**

Within the ACE tool (Curtis et al 2007a) examples are provided for each of the 10 sections, with guidance, images and evidence in the form of children's statements, which can provide support for those wishing to undertake their own review of children's facilities.

## How do healthcare environments impact on children?

“

When children (and their parents) enter an unfamiliar environment, new experiences may elicit feelings of fear and anxiety.”

Much of the literature linked to children's experience of healthcare provision identifies the importance of the environment (Herbert et al 2014, Livesley and Long 2013, Farjouet et al 2013, Ekra and Gjengedal 2012, Norton-Westwood 2012, Linder and Christian 2011, Adams et al 2010, University of Sheffield School of Architecture 2007, Curtis et al 2007a and NHS Estates 2004b).

Bishop (2008) notes the importance of identifying children's own perspectives in terms of why certain aspects of the environment are important and what role this plays in their experience of health care. The literature presents contradictory findings, such as children feel hospitals can be 'fun places' but can also be threatening (Coyne and Kirwan 2012). This demonstrates the complexity of trying to cater for children across a range of ages, healthcare needs and facilities.

The impact of environmental factors can be long lasting and affect subsequent adult perceptions of healthcare provision (Ekra et al 2012). McQue(2009) acknowledges the need to make dental surgeries 'a less scary place for those that dread visiting' and this refers to adults as well as children.

Making environments 'less scary' and as a result more child-friendly, is cited as a priority by children when asked about their experience of healthcare (Patient Experience Network 2013). However, James et al (2007) states that children, when asked, do not consider the hospital space itself to be scary, just the clinical procedures they undergo whilst in the healthcare setting, which become embodied experiences (Curtis 2007).

When children (and their parents) enter an unfamiliar environment, new experiences may elicit feelings of fear and anxiety (Ekra and Gjengedal 2012, Festini et al 2008, Walker 2006, Coyne 2006). A comprehensive systematic review covering 20 studies undertaken by Norton-Westwood (2012) concluded that there is a clear relationship between the design of the healthcare environment and subsequent anxiety felt by patients, due to feelings that are generated by unknown faces, unfamiliar sounds, smells and sights (Norton-Westwood 2012).

This anxiety increases with age (Ekra and Gjengedal 2012). However, these same sensory elements can also be utilised to soothe and evoke feelings of comfort (Paintings in Hospital 2015a, Norton-Westwood 2012).

The quality of the healthcare environment, particularly when children are hospitalised affects their experience of care (Ekra and Gjengedal 2012, Norton-Westwood 2012) and this can be significant. Kennedy in 2001 (cited NHS Estates 2004b) clearly identified how inappropriate buildings, equipment and poorly trained staff could cause actual harm to children, and a decade later, Kennedy (2010) believes the environment continues to contribute to this potential harm.

## How do healthcare environments impact on children? (continued)

“

One thing most children across all age ranges and all healthcare sites find frightening, irrespective of the environment, is intravenous lines or having blood taken...”

The stress of a noisy, confusing hospital room might result in a child feeling worried, sad, or helpless (Lambert et al 2013). Children's response to the environment induces physical changes whereby 'what you are thinking at any moment is changing your biochemistry' (Pert, cited Kreitzer 2013a) due to constant interactions between the brain, nervous system and immune systems. Adverse physiological responses to the environment lead to higher blood pressure, heart rate, and muscle tension (Kreitzer 2013a, Bird 2007), all of which impede the healing process.

In addition, hormones released in response to the emotional stress caused, can suppress the child's immune system, causing their wounds to heal more slowly (Kreitzer 2013a).

The ability to see medical supplies such as needles or equipment heightens anxiety (Norton-Westwood 2012, Day 2012). It is 'needles' that are often associated with children's perception of 'scary environments' (James et al 2007).

However this can be alleviated by an environment that has pictures which provide a distraction from 'scary instruments' (Forsner et al 2009).

One thing most children across all age ranges and all healthcare sites find frightening, irrespective of the environment, is intravenous lines or having blood taken, 'transforming the hospital space associated with needles into 'scary places' (Curtis 2007). However, Jensen et al (2012) note that some children, when asked, said having blood taken did not hurt.

## Environmental variables

“

Thousands of years ago, Greek temples were designed to surround patients with nature, music, and art to restore harmony and promote healing...”

According to NHS Estates (2004b) the design of the environment is a key element that contributes to children's 'understanding' of, and ability to 'navigate' within their surroundings, and a high quality environment can 'raise the morale of patients, their parents and families, but also the morale of staff who work in the hospital (Alder Hey Children's NHS Foundation Trust 2012, p.20).

Definitive research by Ulrich et al (2004) involving over 600 studies clearly identifies that medical outcomes are influenced by the physical environment, while The University of Sheffield School of Architecture (2007) suggest that over 1000 scientific studies demonstrate how good healthcare design can make a significant contribution to 'actual health outcomes'.

This includes outcomes not only for the patient, but also their family and the staff who care for them within the healthcare facility (Kreitzer 2013a).

Inclusion of the historical perspective provides an opportunity to review significant features that have emerged over a long period of time.

For example, 'thousands of years ago, Greek temples were designed to surround patients with nature, music and art to restore harmony and promote healing' (Kreitzer 2013c) all of which are now acknowledged by children as significant features that can enhance their healthcare experience (Farjouet al 2013, Patient Experience Network 2013, Norton-Westwood 2012, Welly et al 2012, van Staa et al 2011, Adams et al 2010).

For example, Farjouet al (2013, p.727) notes young people when asked for feedback on their environment want 'brighter colours, more windows, a pleasant odour [and] quiet spaces', all of which contribute to the aesthetic experience.

Quan and Joseph (2011, p.18) also note that the provision of 'soothing music, nature views, warm wall colours and lighting [are] associated with higher patient satisfaction'.

Said (2007) explains how children engage with the environment through their 'physical moment, cognitive scanning and social transactions' which requires complex interplay between 'sensorial and motoric actions'.

Children perceive the environment through their senses (Said 2007) and use sight, touch, smell, taste and sound to navigate and engage with their surroundings (Norton-Westwood 2012). Therefore, the design of the environment is a key element that contributes to children's 'understanding' of, and ability to 'navigate' within their surroundings (NHS Estates 2004b).

Said (2007) promotes architectural design processes that involve knowledge of how children perceive environmental properties, which can enable children to have 'better control over aspects of their environment such as privacy or social interaction, heat, light and noise' (Alder Hey Children's NHS Trust 2012, p.20).

## **Environmental variables (continued)**

“

**The design of the environment including sensitive lighting, colour, sound attenuation, texture and materials, is seen as essential to a child’s immediate well-being, healing process and the ultimate outcome.”**

Quan and Joseph (2011) have designed an evidence based glossary, identifying 50 environmental variables which impact on 35 outcomes. These were defined within seven high priority areas, one of which was patient satisfaction.

Although not specific to children, environmental variables which directly affected patient satisfaction included; acoustic ceiling tiles (noise), acuity-adaptable rooms (comfort, cleanliness, and privacy), amenities, attractiveness of the physical environment, music, noise, patient room occupancy and positive distractions.

The outcome that was most associated with environmental variables was anxiety (Quan and Joseph 2011).

Many of these variables are reflected through criteria used within the tools for reviewing children’s healthcare facilities (NHS Estates and Facilities 2008a and 2008b), the design of the environment including sensitive lighting, colour, sound attenuation, texture and materials, is seen as essential to a child’s immediate well-being, healing process and the ultimate outcome.

This is particularly important for children who have cancer as they often have greater acuity levels and therefore, environmental factors may be more acutely experienced than other children (Linder and Christian 2011).

## Healing environments

There is one simple guideline to follow in creating a healing environment – ‘look for ways to reduce stress in the environment’ (Kreitzer 2013d).



The physical environment is known to promote the healing process (van der Riet et al 2014, Quan and Joseph 2011, NHS Estates 2004a) and for children, their psychological and physiological well-being make a significant contribution to the healing process (Eisen et al 2008). Healing is a holistic process and a common effect of healing is a reduction in stress and anxiety, both of which can be ‘manipulated’ by the environment (Norton – Westwood 2012). Identification of environmental stressors that induce stress for children should enable these stressors to be eliminated, thereby enhancing the overall healthcare experience (Sfandyarifard 2013). However, this is a complex area as the effects can alter according to culture and personal preference (Kreitzer 2013c) and what one person considers to be a healing environment may have the opposite effect on another (Bromley 2012, Gesler et al 2004). This may be due to the fact that experience is influenced mostly by ‘our memories, as well as our attitudes, beliefs, values and intentions’ (Kreitzer 2013c). Therefore, how an environment will affect us, will depend on our prior experiences and expectations.

Healing environments can embrace architectural principles, creating intimate spaces that reflect the ‘human scale’ while developing a ‘sense of smallness’ in large and complex buildings (Bromley 2012).

Generically, ‘healing features such as wooden chairs, nature photography, and indoor plants’ are known to contribute to health outcomes and patient satisfaction (Quan and Joseph 2011, p.18). Elements of form, light and colour are known to have a

physical effect on patient well-being, and this can be promoted through the use of appropriate art within the healthcare environment (Paintings in Hospitals 2015a, Lankston et al 2010). The display of visual art is associated with shorter stays in hospital, increased pain tolerance and a reduction in anxiety (Langston et al 2010).

Noise is often associated with the creation of stress (Herbert et al 2014, Linder and Christian 2011, NHS Estates 2004b). Therefore, the acoustics should provide calm, tranquil conditions that aid patient recovery as well as providing pleasant places for medical staff to work (Anonymous 2011).

These features have been brought together in the new Alder Hey in the Park which has been designed, with children and their families, to provide a unique healing environment (Alder Hey Children’s NHS Foundation Trust 2012, p. 3). Hospital gardens are known to reduce stress and in turn this will promote healing. Originating in the Middle Ages when hospitals and monasteries contained a courtyard for the benefit of residents (Bird 2007), today these spaces are valued by children who enjoy the opportunity to engage with the natural world (Lambert et al 2014, Norton-Westwood 2012, NHS Estates 2004b).

## Environmental influences and how their significance varies with age

While reviewing the literature for the perspectives of children regarding their experiences of healthcare environments, some of the findings could be categorised under the three distinct age bands: young children (0–5 years), middle childhood (5–11 years) and young people (Hubbuck 2009). The experiences of children within the early years are conspicuous by their absence.

User group	Positive environmental features	Negative environmental features
Early years (0–5 years)		Night time disturbances due to nursing activity and increased noise levels (Herbert et al 2014)
Primary – Middle childhood (5–11 years)	Can make children feel safe (NHS Estates 2004b) Allows children to remain close to people they love, especially their parents (Livesley and Long 2013, Ekra and Gjengedal 2012, Roberts 2010, NHS Estates 2004b) Arrangements for eating (Ekra and Gjengedal 2012, NHS Estates 2004b) Provide nice areas to play (Weil 2013, NHS Estates 2004b) Want opportunities to do things while waiting for things to happen (Ekra and Gjengedal 2012, NHS Estates 2004b) Aquariums (Ekra and Gjengedal 2012)	Too much noise and light at night (Herbert et al 2014, Linder and Christian 2011, NHS Estates 2004b) Feeling too hot (NHS Estates 2004b) Unpleasant smells (NHS Estates 2004b) Seeing and hearing other children who are sick (Ekra and Gjengedal 2012) Crying babies (Gibson et al 2010) Caught between early years and young people facilities (Lambert et al 2013) Children perceive hospital spaces only meet the needs of younger children (Coyne and Kirwan 2012, Curtis 2007, James et al 2007)
Young people (12–18 years)	Dedicated adolescent facilities (Kovacs Silvis 2013a, Farjou et al 2013, Norton-Westwood 2012, NHS Estates 2004b) Need for privacy (Kennedy 2010) Feel something in common with other patients (Farjou et al 2013, Gibson et al 2010, NHS England 2004b) Welcoming and peaceful (Farjou et al 2013) Comfort for family members (Farjou et al 2013)	Feeling embarrassed Being on a ward with much younger children or much older people (Kennedy 2010, NHS Estates 2004b) Too much noise and light at night (Herbert et al 2014, Linder and Christian 2011) Multiple occupancy rooming (Farjou et al 2013) Absence of windows or brightness (Farjou et al 2013) Rooms being too small (Farjou et al 2013, Coyne and Kirwan 2012) Lack of entertainment (Farjou et al 2013) Hospital spaces only meet the needs of younger children (McKenzie et al 2010)

## Developmental considerations



Research shows that environments that demonstrate age appropriate design help children psychologically, impacting on children's physical health, emotional well-being and mental wellness."

Children's perceptions alter significantly with age, developmental stage and personality, which in turn will impact on their experience of the health care environment (Day 2012, Hubbuck 2009).

All children want child-friendly environments that promote and support their welfare (Ford 2011). Research shows that environments that demonstrate age appropriate design help children psychologically, impacting on children's physical health, emotional well-being and mental wellness (Norton-Westwood 2012). Engaging environments can also help to alleviate the perception of boredom (Lambert et al 2013, Gibson et al 2010, Said 2007) and children suggest, as they get older this becomes more significant in terms of their overall experience (Festini et al 2008).

Said (2007) advocates inclusion of the child's voice when considering architectural development of the environment, emphasising the importance of incorporating theoretical knowledge about children's cognitive development into the architectural process.

Said (2007) specifically cites children's perception of architecture as significant, because children are shaped by the environments they inhabit and therefore, the design of children's spaces must enable them to function physically, socially and cognitively if they are to develop normatively. This is particularly important within the context of health care provision as those utilising services are generally ill (although siblings will also use healthcare facilities).

Developmental regression is common (Hubbuck 2009), especially in older children who reveal anxiety about hospitalisation, more so than younger children (Roberts 2010, Hubbuck 2009). This is due in part to anticipatory anxiety, due to previous experiences and the influence of media portrayals, such as TV programmes such as *Casualty* (Hubbuck 2009, Coyne 2006).

Bishop (2012) cites three key components that children identified as being important when considering the 'child-friendliness' of the hospital environment, and the significance of each alters as children grow and develop: aesthetics of the environment, of which art is a key element; volume of age-appropriate activities; and the welcome they received from the hospital community.

This final point is important as for older children in particular, more significance is placed on the interpersonal skills of the provider than the environment in which the care takes place (Lugasi et al 2011, Robinson 2010). Although confidentiality, access to information and contact with families and friends' is a general priority for everyone accessing healthcare services, this need is particularly important for young people (Norton-Westwood 2012). Interestingly, children aged 7–8 years of age feel they are caught between facilities designed for younger children and those for young people, which they do not have access to (Lambert et al 2013) and this is a valid point.

## Developmental considerations (continued)

“

The views of younger children in particular need be captured, as their views differ more significantly to those of the adults.”

As children get older, they become more interested in the facilities they engage with (Gibson et al 2010) and become more capable of giving detailed feedback about their preferences (van Staa et al 2011). However, Lambert et al (2013) note that the views of younger children in particular need be captured, as their views differ more significantly to those of the adults.

This poses methodological challenges (Carter 2009) but it can be done and, children under the age of five are expected to be given the opportunity to complete the Friends and Family Test, albeit with additional support (NHS England 2014).

Walker (2006) provides a comprehensive overview of developmental considerations in relation to the environment, separating these into three distinct age ranges – babies and infants (2 years and under), children aged 2–12 years and young people (all patients using adolescent spaces).

Although these are linked to the auditing of play services, consideration is given to differing healthcare settings such as paediatric inpatients, paediatric outpatients, Accident and Emergency and community settings.

## Addressing the needs of young people



Bishop (2012, p.84) identified that 'remaining engaged and maintaining a positive frame of mind were... fundamental elements in children's and young people's feeling of well-being in hospital' and that young people state the environment plays a crucial role in achieving a positive healthcare experience. For some young people, the environment is the most important factor when in hospital (Livesley and Long 2013).

In 2004, there was little evidence of the effectiveness of providing dedicated facilities for young people, so Viner (2007) conducted a retrospective analysis of the national English Young Patient Survey 2004.

The findings, covering 8855 young people aged 12–17 years of age clearly indicated that 'dedicated adolescent inpatient wards improve aspects of quality of care for young people compared with child or adult wards, particularly for older adolescents' (Viner 2007, p. 749). Kennedy (2010) noted that young people become distressed by inappropriate environments, and the effect of the environment on 'event-related anxiety' is often not appreciated within this age group (Norton-Westwood 2012). Maslow (1943) would agree, suggesting that people who have not experienced the need (in this case facilities specifically for young people), underestimate its importance.

Kennedy (2010) describes the importance of providing environments that are dedicated to the care of young people and how staff need to be aware of how to provide a positive experience for them when they are sick.

Highlighting the insensitivity shown by some staff towards young people's needs and the resultant distress this causes (Kennedy 2010), Norton-Westwood (2012) suggests one way in which this can be addressed is through the 'appropriate use of space and design' which reflects young people's individual needs.

For example, young people value the opportunity to control lighting (Birch et al 2007) and suggest the use of mood lighting which can be used to alter the thematic design of the ward (Coad and Coad 2008). Young people's preference for mid-deeper colours was evident when specifically asked for their colour preferences (Coad and Coad 2008) and this is reflected in the design of the Consulting rooms in the Young Person's Healthcare Centre, Blackburn (Boex n.d.).

This is now being actively promoted by health service providers such as Newcastle upon Tyne Hospitals NHS Foundation Trust (2015b) and Birmingham Children's Hospital (n.d.d). The provision of facilities that actively engage young people in the design process (Boex2015b, Patient Experience Network 2013, Bayliss 2011,) is the ultimate goal. When this is not an option, young people prefer opportunities to display their own artwork as opposed to fixed art that is permanently displayed (Bishop 2012). Examples of the participation process are provided in case studies 3, 4 and 5. The participation of young people themselves in designing and installing artwork is provided in case study 2 and Waterworld and Treetops: Designed with Children for Children by Penny Bayliss Robbins (2012).

## Theoretical perspective

### Albert Bandura – Reciprocal determinism



Gesler et al (2004, p.119) suggest that 'hospitals are behaviour settings where there is a definite relationship between people (patients, staff, visitors) and the built forms of the hospital.' As such, all buildings "are both shaped by people and capable of shaping occupants' behaviours and feelings" (Adams et al 2010, p. 659). This can be exemplified by a statement from a teenage cancer patient who stated '[the treatment centre] is a pretty dreary place to go to and look at. You felt 'crappy' being here' (Farjou et al 2013, p.725). This statement exemplifies Bandura's theory of reciprocal determinism, whereby interactions between our thoughts, the environment and our behaviour constantly change the way we think and feel (Allen and Gordon 2011). Boyd and Bee (2012) further elaborate and suggest that the three components – the external environment, individual behaviours and cognitive/personal factors (including the child's stage of cognitive development) – influence, and are influenced by each other on a reciprocal basis (Boyd and Bee 2012).

Thus, experiences that induce anxiety such as being examined by a doctor or visiting the dentist (Boye et al 2011), will be influenced by the environment as well as the child's personality and level of cognitive development (Day 2012), which in turn will determine the child's behaviour (Boyd and Bee 2012).

In practice, this theory helps to explain why, when children (and their parents) enter an unfamiliar environment, new experiences may elicit feelings of fear and anxiety (Ekra and Gjengedal 2012, Festini et al 2008, Walker 2006, Coyne 2006, Dalke et al 2005).

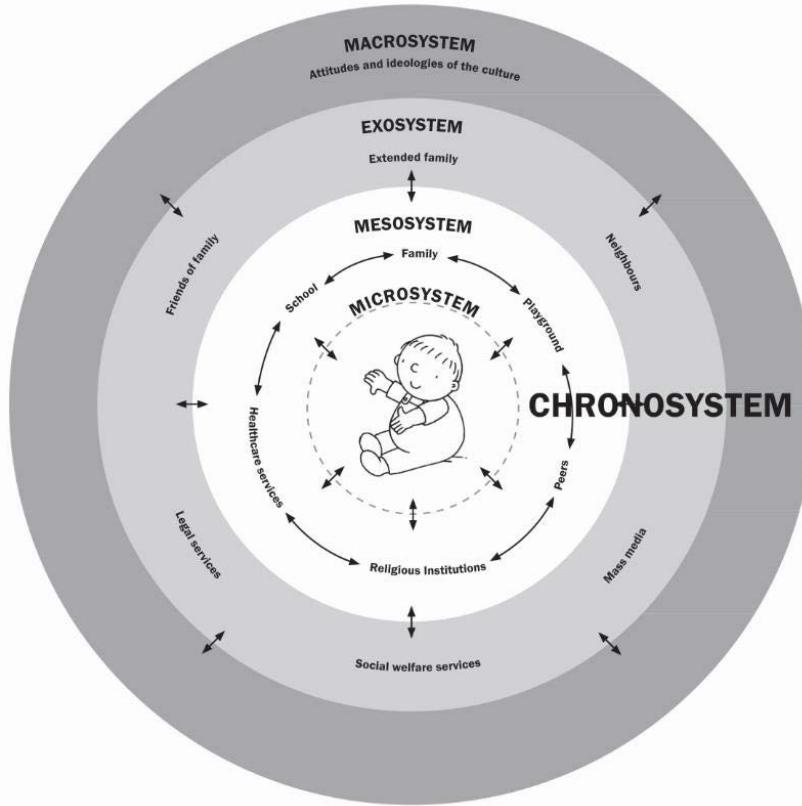
A comprehensive systematic review covering 20 studies undertaken by Norton-Westwood (2012) concluded that there is a clear relationship between the design of the healthcare environment and subsequent anxiety felt by patients, due to feelings that are generated by unknown faces, unfamiliar sounds, smells and sights (Norton-Westwood 2012, Coyne 2006). This anxiety increases with age (Ekra and Gjengedal 2012). However, these same features can also be utilised to soothe and evoke feelings of comfort (Paintings in Hospital 2015a, Norton-Westwood 2012) which can reduce anxiety.

Gesler et al (2004) defined elements of the therapeutic environment and explored three distinct aspects – the physical space, the social space and the symbolic space. Each one can reflect the perceived 'child-friendliness' of the environment and elicit feelings in the child as to whether or not they feel the environment is welcoming and safe or scary and threatening (Lambert et al 2013) which results in a behavioural response from the child.

For example, a playroom has been installed as an integral part of a new Neonatal Intensive Care Unit (NICU) in Bath. For a child visiting the unit, the playroom offers a welcoming environment within the physical space with play facilities symbolising normal childhood activities (Söderbäck et al 2011, Walker 2006). This also offers opportunities for socialisation and provides the child with a familiar environment and a sense of security. The resulting behaviour is likely to reflect a positive experience for the child, at what is likely to be a distressing and stressful time for the family.

## Theoretical perspective

### Uri Bronfenbrenner – Ecological Systems Theory



Visual from How Children Learn 3 – Contemporary thinking and theorists by Linda Pound, Practical Pre-School Books 2009, by permission of the Publisher.

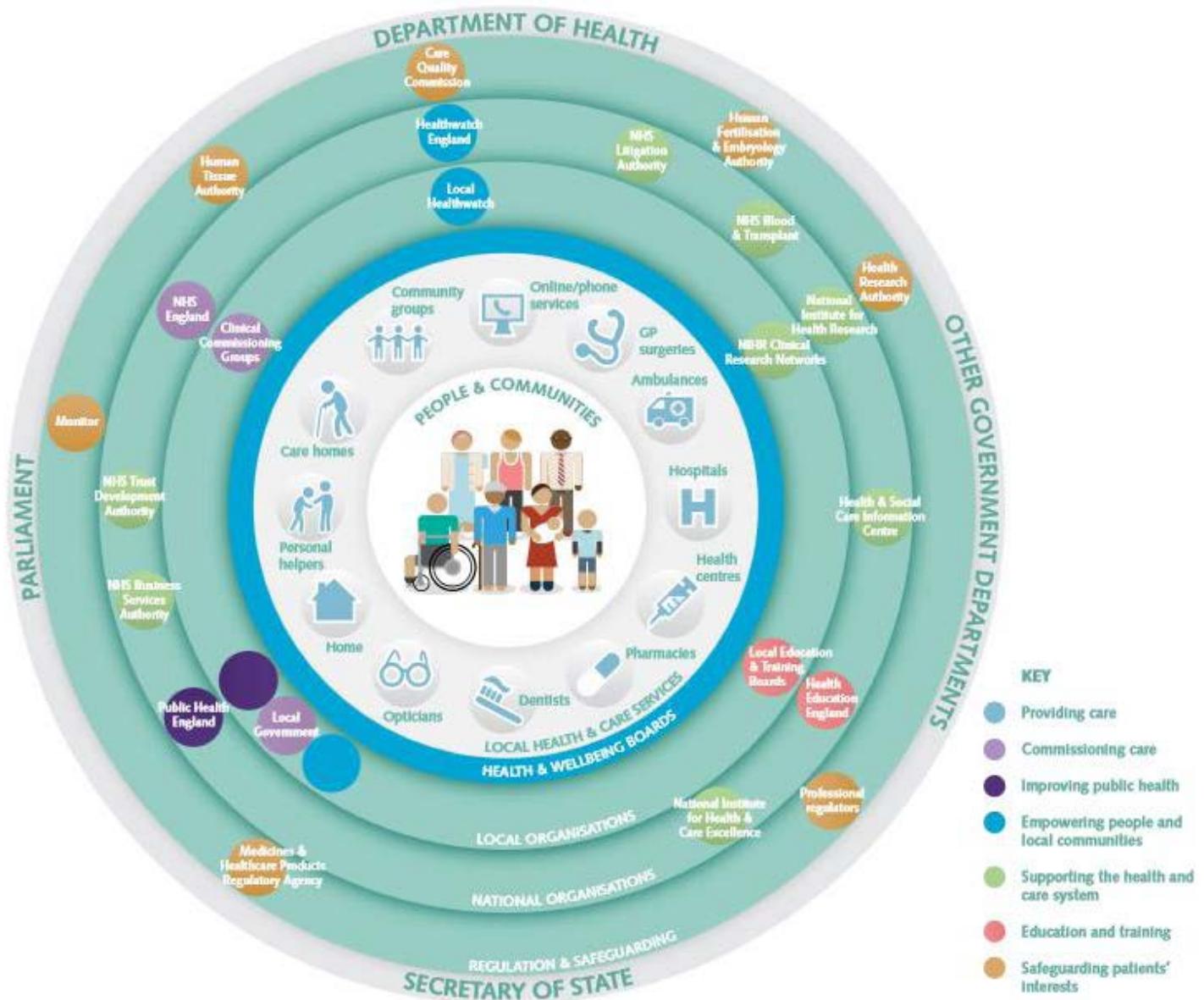
Bronfenbrenner (1994) explored the role of the environment in which people live and the link to their subsequent development across the lifespan. Within his Ecological Systems Theory, Bronfenbrenner (1994) noted the influence of people, objects and symbols in the immediate environment and the impact this can have on the individual (Barlow and Blair 2013, Boyd and Bee 2012). This can be exemplified through the display of anxiety and fear that unfamiliar healthcare environments can induce in children and their families (Norton-Westwood 2012, Boyd and Bee 2012, Day 2012, Adams et al 2010, Roberts 2010, Festini et al 2008, Coyne 2006). This is particularly useful when considering the effects of the social environment, linked to mood, behaviour and relationships (Kreitzer 2013c, Söderbäck et al 2011).

However, Bronfenbrenner's theory is also useful for describing the role of indirect influences that shape the environment within which the child exists. Bronfenbrenner (1994) describes an 'overarching' layer, known as the macrosystem involving 'cultural, political and ideological factors that in turn influence and shape all other layers of the ecological system (Roundy, 2015, Pound 2009).

Therefore, when Adams et al (2010) describe the influences of political priorities, social values and medical advances, all of which affect the healthcare environment (Gesler et al 2004), these factors in themselves do not directly affect the child, but indirectly provide the foundations of the environment which the child will experience.

Characteristics of health-related practice have resulted in several adaptations of Bronfenbrenner's Ecological Systems Theory, with the latest reconceptualization being reflected through an interactive infographic showing the healthcare system in England from 2013 (Department of Health 2013d).

## Infographic: the healthcare system in England from 2013 (Department of Health 2013d)



## Theoretical perspective

### Jean Piaget – Schema formation

A key function of cognitive activity is being able to link previous experiences to current situations, using information that can be stored and subsequently retrieved. Piaget believed children have a set of ‘pre-determined mental blueprints (schema) that allowed the child to adapt and respond to their environment by the two linked processes of assimilation and accommodation’ (Tonkin 2007, p.64).



Preparing a child for theatre. Image courtesy of Chelsea and Westminster NHS Foundation Trust

When children enter an unfamiliar environment, they do not have a readily available schema on which to build, and therefore, new environments can appear frightening and scary places (Norton-Westwood 2012, Festini et al 2008, NHS Estates 2004a and 2004b). However, for many children, it is ‘fear of the unknown’ and a lack of information that makes the experience ‘scary’ as opposed to the environment itself (Coyne and Kirwan et al 2012, Boye et al 2011).

Children want to know what is happening (Fletcher et al 2011) and can adapt quickly to their environment (Jensen et al 2012, Coyne 2006). Once children have ‘lived experience’ of the environment, assimilation and accommodation enables the child to make sense of this new experience (Randall and Hallowell 2012, Ford 2011). For example, a young dental patient Helena Burton (cited Bridgewater Community Healthcare NHS Trust 2014), highlighted the importance of being fully prepared, noting ‘they created a separate appointment for me to come in and test all the equipment so I thought that was better as I knew what was happening’.

A pilot project developed by Northumbria Healthcare NHS Foundation Trust for looked after children, who traditionally are less likely to access dental services or participate in routine dental care routines, acknowledged the importance of acclimatization visits, and together with the attitude of the dental team, this additional support resulted in improved levels of cooperation when attending for appointments (Patient Experience Network 2013). A similar rationale can be used for the preparation of children prior to medical procedures or interventions. Structured play enables the introduction of ‘developmentally appropriate information about forthcoming procedures’

which can ‘reduce anxiety and increase cooperative behaviours (Walker 2006, p.10). Children may ‘represent’ forthcoming procedures in terms of their schema formation, with fantasies and misconceptions, therefore, preparation allows these to be appropriately explored and if necessary challenged, and enables rehearsal of coping strategies ‘having done the work of worrying in the playroom’ (Walker 2006, p.11). It also provides children with an increased sense of involvement and control (Gibson et al 2010), ‘facilitating their sense of self in the environment’ (Ford 2011, p. 255).

The application of schema formation is very flexible which enables it to be applied to most areas of knowledge acquisition (Tonkin 2007). According to Boyd and Bee (2012), self concept can be thought of as a ‘self-scheme’ and when children process information through their senses, they ‘actively make meaning’ of the experience, which then becomes part of the child’s sense of self (Ford 2011). A child’s sense of self is rooted in the familiar. Therefore, when children enter an unfamiliar environment such as a hospital, their sense of self is disturbed as they would not normally ‘see’ themselves within this setting (Ford 2011). This explains why many children suggest they do not experience the same levels of fear if they are re-admitted (Ford 2011). Similarly, being able to access play opportunities provides children with familiar experiences that they associate with normality, in an otherwise unfamiliar environment (Ford 2011, Söderbäck et al 2011) which in turn, expands the hospital experience and subsequent schema representation of the hospital as a healthcare setting (van der Riet et al 2014, Randall and Hallowell 2012).

## The need for play and recreation

A picture from the ‘newly formed Great Ormond Street Hospital’ published by The Illustrated Times in 1858 ‘creates an image of a warm and jolly place... there are lots of toys to play with, and quite a few children are free to roam around... there is a large table which a group of children are sitting at and appear to be engaged in drawing or some sort of craft activity’ (Baldwin 2010).



Image courtesy of HHARP: the Historic Hospital Admission Records Project

## The need for play and recreation (continued)

Photographic records from archives of hospital wards around the early 1900's suggest environments at the time consisted of open spaces which were light, airy and had play facilities (Historic Hospital Admission Records Project 2010).

Children's nursing at this time reflected 'affection and nurture [as the] cornerstones of Florence Nightingale's philosophy of nursing care of children' (Roberts 2010, p.471). It is believed this view changed with industrialisation and the incidence of World War 1, resulting in limited parental visitation and a very orderly, child-unfriendly environment' (Roberts 2010, p471).

Therefore, when dedicated children's services emerged as part of the NHS from 1948 onwards, the provision of care for hospitalised children was highly regimented and the 'medical' needs of the child superseded any consideration for the holistic needs of the child. It was not until 1959, when the report Welfare of children in hospital by the Ministry of Health (1959) was published, that the emotional needs of the child and the provision of play facilities were promoted (Tonkin and O'Donnell 2014).

However, five decades later, Kennedy (2010) still laments the lack of appropriate environments that offer opportunities for play and recreation for children, particularly in services that do not have dedicated children's provision (Coyne and Kirwan 2012). Even within dedicated children's services, it is often when play opportunities are lacking that the value of play is most evident (Care Quality Commission 2014a and 2014b, Coyne 2006).

All children need to play on a daily basis and participation in play related activities is fundamental to children's holistic development (Committee of the Rights of the Child 2013, International Play Association 2013, Play Scotland 2012). However, the need is even greater when children are unwell or have a chronic health condition and under these circumstances, children will require additional

support to ensure their right, under article 31 of the UNCRC is fulfilled (Tonkin 2014). As Schultz (cited Kovacs Silvis 2013a) notes, 'when a child is sick or being treated, there's still a need for play to make it fun', which children appreciate themselves (Bishop 2008). However, opportunities for 'quietness' are also needed, enabling rest and relaxation (Lambert et al 2013).

The provision of what children themselves consider to be appropriate 'leisure and entertainment' activities alters significantly with age (Lambert et al 2013, Farjou et al 2013) and why design needs to facilitate symbolic play according to developmental stage of the child (Norton Westwood 2012).

Children across the age range want access to activities such as computers, movies, games and music (Coyne and Kirwan 2012). Activities cited by teenagers as being appropriate in terms of entertainment included arts and crafts and music (Farjou et al 2013), while younger children aged 5–8 years of age prefer a diverse range of recreational activities that 'accommodate different abilities, disabilities and interest' (Lambert et al 2013, p.199). This variation across the age range has been reflected in the design of the new children's hospital Alder Hey in the Park (Alder Hey Children's NHS Trust 2012) whereby 'children, young people and teenagers will have dedicated areas to play, relax, rest and recover'.

Children value opportunities to socialise and play with other children (Farjou et al 2013, Lambert et al 2013, Ekra and Gjengedal 2012, Coyne and Kirwan 2012) and the provision of 'relational spaces' encourages socialisation and helps children to build and maintain relationships with peers and their families (Lambert et al 2013).

## The need for play and recreation (continued)



This also helps with children's expressed need to 'stay occupied and positively engaged whilst in hospital, which reduces the likelihood of becoming bored and feeling down about their situation' (Bishop 2012 p.86).

Children will try and find 'commonality in hospital to their home environment' (Coad and Coad 2008) particularly with activities they engage with when they are at home (Jensen et al 2012).

In order to achieve this, children try to bring in activities that they associate with home, enabling an element of control in an unusual situation (Jensen et al 2012). Long term patients in particular value opportunities for entertainment (Farjou et al 2013, Lambert et al 2013) which increasingly involves the use of electronic resources.

Play areas should be accessible wherever possible (Alder Hey Children's NHS Trust 2015a) featuring a diverse range of developmental and gender appropriate play and leisure facilities (Lambert et al 2013).

Children report frustration when appropriate spaces are locked and not readily accessible (Gibson et al 2010, James et al 2007), stating that not only should entertainment options be readily available, they should also be independently accessible (Lambert et al 2013, Curtis 2007).

This is reflected in two reports by the Care Quality Commission (2014a and 2014b) as access to facilities is often linked to availability of a Health Play Specialist (HPS), particularly at the weekend.

Norton-Westwood (2012) also highlights another issue that can occur when access to play facilities is restricted. Citing the findings from a recent report, it was noted that playrooms were under utilised within a purpose built paediatric hospital.

The administrators were then able to query whether there was a need for the playrooms, suggesting the spaces could be put to better use as all existing space was fully accounted for (Norton-Westwood 2012). As a result of exploring other studies, Norton-Westwood poses a series of questions:

- Are the children and their parents aware of the playrooms?
- Can the children readily access the playrooms either on their own or, if needed, are staff or volunteers available to assist?
- Is the playroom itself inviting?
- Does it entice children to enter and explore and does it keep them engaged by providing unique, exciting and age appropriate toys and activities? (Norton-Westwood 2012, p.9).

At a time when play services are under serious threat (Tonkin and O'Donnell 2014), the value of play needs to be promoted and evidence of the financial savings that can be made through preparing children to adapt to unfamiliar environmental features both before and during clinical activities is required (Tonkin 2014). Children are the biggest advocates for play and recreational activities, and making them more accessible would benefit everyone.

# Children and young people's experiences of healthcare environments



Extended commentary 1 – Sensory environments	48
Case study 2 – Collaborative project between Northwick Park Hospital and Stanmore College	55
How do healthcare environments influence experience?	79
Using the environment to promote safety and security	80
The changing face of healthcare environments	82
When asked, children prefer...	83
First impressions	84
Way-finding	86
Entrances, reception and waiting areas	87
Corridors	88
The importance of ceilings	89
Imaging	90
Staying in hospital	91
The importance of sleep	92
Socialisation	94
Promoting privacy and dignity	95
Engaging the sensory experience	97
Addressing complex needs	98
The role of nature	99
The role of art	100
The role of new technology	102
Oral health – going to the dentist	104
The home as a healthcare environment	106



1.



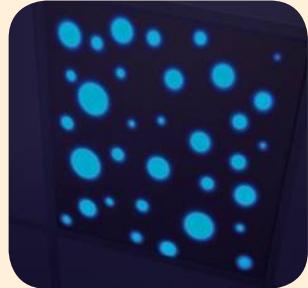
2.

## Extended commentary 1: **Sensory environments**

Hannah Lashite | Healthcare Play Specialist student  
Stanmore College

1. Image courtesy of Rhino
2. Image courtesy of Experia

## Extended commentary 1: Setting the scene



Sensory impairments can happen as a result of many things, including ageing, illness and disease; however, multisensory environments can support these individuals (Cook 2011). Cleland and Clark (1966, cited by Lancioni et al 2002) were first to make a connection with multisensory environments and people with learning disabilities; they believed when in an appropriately arranged room containing resources which stimulate the senses, named sensory cafeterias, improvements could be made in some areas of development.

Research by Hulsegege and Verheul in 1978 showed children with severe mental and physical disabilities could interact with their environment when given sensory stimulation (Christopher Douglas Hidden Angel Foundation 2011). Their findings led them to name this multisensory experience Snoezelen, a combination of Dutch phrases meaning to explore and to relax (Snoezelen Multisensory Environments n.d.). Hulsegege and Verheul highlight that this environment is not exclusively for children.

Research and observations in elderly people with dementia have shown the environment has a calming effect (Christopher Douglas Hidden Angel Foundation 2011; Cook 2011). Despite this, the idea of Snoezelen, or sensory rooms, has largely been associated with children and young people with special educational or complex needs.

One head teacher of a school for children with special educational and complex needs strongly advocates for the presence of a sensory room, observing that pupils can be stimulated or calmed in such environments (BBC 2012). Although a small scale study, Hill et al (2012) found similar results, with unwanted behaviour reducing in young people once they accessed the sensory room. Sensory rooms, however, do not just serve those with mental and physical disabilities (Pinkney 2003).

---

## Extended commentary 1: Sensory experiences within healthcare



The use of relaxation for dealing with medical conditions has also been researched, with Cramer et al (2013) finding that over 60% of those using relaxation techniques including meditation, deep breathing and guided imagery felt it helped. This supports the findings of Hotz et al (2006) whose small scale study looked at the physiological effects of the sensory room when used with children recovering from brain injury; heart rate and muscle tension lowered as a result of slowed breathing when in this environment.

It is also not only the service users that report benefits. Smith and Jones (2014) found patients, visitors and practitioners on an intensive care unit felt the sensory room helped to de-escalate situations, relax and calm patients down. Parents also find the sensory room to be not only relaxing for themselves, but report their children are calmer, especially when medical procedures are a regular occurrence (Great Ormond Street Hospital Children's Charity 2014).

Research by Hauck et al (2008a; 2008b) showed women using a sensory room during labour and breastfeeding listed many benefits of this environment including:

**Relaxation,**

**Distraction**

**Comfort**

Additionally, those who felt anxious or struggled with breastfeeding felt the relaxing surroundings aided their attempts.

Extended commentary 1:

## Care is needed and training is required



While using sensory rooms can have a positive impact on individuals, adverse effects can occur if experiences are not appropriate (Fowler 2008). Cook (2011) agrees, stating that with dementia patients, inappropriate input can cause distress, such as not knowing where the source of a sound is coming from. Training is therefore essential for people who are planning on facilitating the use of these environments in order to get the maximum results from their use (Cook 2011).

Rhino UK (2014a) and Experia (2015) offer training on how to use their products once installed, as well as advice on maintenance and cleaning of items. Although this meets some requirements, Cook (2011) believes training in this area needs to include a focus on the individual, including how to set up the room and meet their specific needs.

Education on the use of multisensory environments includes adaptation of activities to be fully inclusive, ways of structuring play sessions and creating the correct environment for the patient (Concept Training 2015a; 2015b).

When practitioners are trained, they are able to disseminate their learning to other members of the multidisciplinary team, who are then better able to support individuals when using multisensory environments (Tonkin et al 2014).

The benefits of training do not just include understanding how to use sensory rooms. Worcester Snoezelen (n.d.) offer advice and practical ways to create spaces and resources to promote multisensory experiences which do not always need to involve expensive equipment and dedicated rooms.

## Extended commentary 1: Portable sensory experiences

A study by Shapiro et al (2009) looked at groups of children undergoing procedures likely to cause high anxiety.

By adapting their surroundings to include sensory considerations such as tactile opportunities, softer lighting and projected images, both developmentally disabled and the control group of children with no disability were calmer, although the impact was greater on those with a disability.

Hinklin-Lauderdale (2014) further points out the benefits of a sensory room can be gained in a space dedicated to sensory experiences.

Although looking at education settings, Goodsell (2014) believes that when entire rooms cannot be used, objects found in a sensory room can be provided in a portable fashion.



1.



2.



3.

1. Selection of portable sensory resources: Image courtesy of Rhino

2. Sight and light panel: Image courtesy of Rhino

3. Squidgy panel – provide visual and tactile experience when walked on: Image courtesy of Rhino

## Extended commentary 1: Practical applications



Portable sensory trolley: Image courtesy of Rhino

A case study by Wallace-Sullivan (2014, cited Tonkin et al 2014) highlights the use of a sensory trolley in a healthcare setting; when a child with complex needs was unable to access the sensory room, the sensory trolley was used to take the sensory experience to the bedside.

Holland Bloorview Kids Rehabilitation Hospital (2013) point out that the main components of any sensory room include fibre optic lights for tactile experiences and a bubble tube for visual stimulation, all of which can be found or added to a portable sensory trolley.

Many sensory trolleys have a variety of options for equipment which can be added at different times depending on existing resources and finances.

By having a sensory trolley which can be moved to different areas, play specialists will be able to meet the needs of the children and young people regardless of which setting they are in, which the National Association of Health Play Specialists (NAHPS 2013) outline in their occupational standards.

By doing this, the play specialist will be able to maintain a level of quality in their work and encourage others to do so through modelling their practice, while advocating for the child or young person and their needs (Department of Health 2004; NAHPS 2013).

## Extended commentary 1: References

- BBC (2012) Sensory rooms 'stimulate or calm,' Penarth school head says. Online. Available: <http://www.bbc.co.uk/news/uk-wales-18438826> Accessed: 11 November 2014.
- Christopher Douglas Hidden Angel Foundation (2011) Scully the world show - hidden angels series: Ad Verheul and Jan Hulsegege Part 3. Online. Available: <http://www.youtube.com/watch?v=rV2dVW9-15I> Accessed: 11 November 2014.
- Concept Training (2015a) Practical and effective ways of using multi sensory equipment. Online. Available: <http://www.concept-training.co.uk/course/4/Practical-Effective-Ways-of-Using-Multi-Sensory-Equipment.html> Accessed: 25 January 2015.
- Concept Training (2015b) Sensory play for all. Online. Available: <http://www.concept-training.co.uk/course/121/Sensory-Play-For-All.html> Accessed: 25 January 2015.
- Cook, G. (2011) Dementia care: sensory environments. *Nursing and Residential Care*, 13(5), p.240-243.
- Cramer, H., Lauche, R., Langhorst, J., Dobos, G. and Paul, A. (2013) Characteristics of patients with internal diseases who use relaxation techniques as a coping strategy. *Complementary Therapies in Medicine*, 21(5), p.481–486.
- Department of Health (2004) The NHS knowledge and skills framework (NHS KSF) and the development review process. London: Department of Health.
- Experia (2014a) Sensory rooms. Online. Available: <http://www.experia-innovations.co.uk/sensory-rooms> Accessed: 12 February 2015.
- Fowler, S. (2008) Multisensory rooms and environments: controlled sensory experiences for people with profound and multi disabilities. London: Jessica Kingsley Publishers.
- Goodsell, K. (2014) Sensory rooms in mainstream schools. Katherine Goodsell's blog. 7 March 2014. Online. Available: <http://www.katherinegoodsell.co.uk/blog/sensory-rooms-in-mainstream-schools> Accessed: 3 December 2014.
- Great Ormond Street Hospital Children's Charity (2014) Engaging young minds: sensory rooms at GOSH. Lifeline: the Great Ormond Street Hospital Children's Charity blog. 19 September 2014 Online. Available: <http://blog.gosh.org/our-hospital/engaging-young-minds-sensory-rooms-at-gosh/> Accessed: 30 November 2014.
- Hauck, Y., Rivers, C. and Doherty, K. (2008a) Women's experiences of using a Snoezelen room during labour in Western Australia. *Midwifery*, 24(4), p. 460-470.
- Hauck, Y., Summers, L., White, E. and Jones, C. (2008b) Qualitative study of Western Australian women's perceptions of using a Snoezelen room for breastfeeding during their postpartum hospital stay. *International Breastfeeding Journal*, (3)1, p. 1-9.
- Hill, L., Trusler, K., Furniss, F. and Lancioni, G. (2012) Effects of multisensory environments on stereotyped behaviours assessed as maintained by automatic reinforcement. *Journal of Applied Research in Intellectual Disabilities*, 25(6), p.509-521.
- Hinklin-Lauderdale, J. (2014) Creating a sensory room on a budget. eSpecial Needs Blog. 3 April 2014 Online. Available: <http://www.especialneeds.com/blog/budget-sensory-room-building/> Accessed: 3 December 2014.
- Holland Bloorview Kids Rehabilitation Hospital (2013) Snoezelen at Holland Bloorview. Online. Available: <http://www.youtube.com/watch?v=1Y4JgZw6Xpk> Accessed: 11 November 2014.
- Hotz, G., Castelblanco, A., Lara, I., Weiss, A., Duncan, R. and Kuluz, J. (2006) Snoezelen: A controlled multisensory stimulation therapy for children recovering from severe brain injury. *Brain Injury*, 20(8), p. 879-888.
- Lancioni, G., Cuvo, A. and O'Reilly, M (2002) Snoezelen: an overview of research with people with developmental disabilities and dementia. *Disability and Rehabilitation*, 24(4), p. 175-184.
- National Association of Health Play Specialists (NAHPS) (2013) National Association of Health Play Specialists occupational standards 2013. Online. Available: <http://nahps.org.uk> Accessed: 3 December 2014.
- Pinkney, L. (2003) Investigations into the value of multisensory environments. *Nursing and Residential Care*, 5(2), p. 63-67.
- Rhino UK (2014a) Services. Online]. Available: <http://www.rhinouk.com/services> Accessed: 12 February 2015.
- Rhino UK (2014b) Sensory voyager trolley. Online. Available: <http://www.rhinouk.com/products/portable-sensory-solutions/sensory-trolley/sensory-voyager-trolley.html#description> Accessed: 28 September 2014.
- Shapiro, M., Sgan-Cohen, H., Parush, S. and Melmed, R. (2009) Influence of adapted environment on the anxiety of medically treated children with developmental disability. *The Journal of Pediatrics*, 154(4), p. 546–550.
- Smith, S. and Jones, J. (2014) Use of a sensory room on an intensive care unit. *Journal of Psychosocial Nursing and Mental Health Services*, 52(5), p. 22-30.
- Snoezelen Multisensory Environments. (n.d.) History. Online. Available: <http://www.snoezeleninfo.com/history.asp> Accessed: 28 September 2014.
- Stephenson, J. (2002) Characterization of multisensory environments: why do teachers use them? *Journal of Applied Research in Intellectual Disabilities*, 15(1), p. 73-90.
- Tonkin, A., Arton, J., Ciampolini, S., Freeman, C., Aylett,S., Warren, A., Gilkes, M., Kirby, R. and Sullivan-Wallace, C. (2014) Using play in diverse healthcare settings. In: Tonkin, A. (ed) *Play in healthcare: using play to promote child development and wellbeing*. Oxon: Routledge, p.191-207.
- Worcester Snoezelen (n.d.) Training. Online. Available: <http://www.worcestersnoezelen.org.uk/index.php/about-us1/training/> Accessed: 25 January 2015.



Case study 2:

## Collaborative project between Northwick Park Hospital and Stanmore College

Clare Weldon and Jeremy Weldon



Case study 2:

## Concept – Northwick Park Hospital

The idea for this project was generated from collaborative work that was being done between Stanmore College (SC), Northwick Park Hospital (NPH) and the Society and College of Radiographers (SCoR).

The aim was to help make imaging departments more child and young person friendly, in line with the Department of Health<sup>1</sup> recommendations that reception, waiting [and] treatment areas are accessible and young people friendly, comfortable and welcoming'.

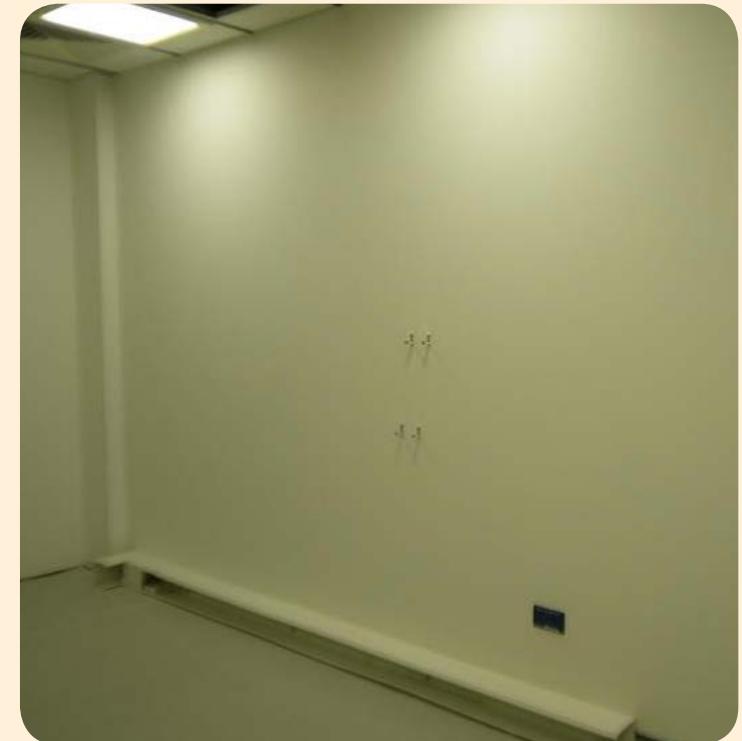
With a new Emergency Department (ED) opening at NPH with a dedicated radiology area it seemed necessary to consider ways to make the environment appropriate for all. Although the specific aim was to improve the environment for children and young people, the affects would benefit all service users as well as staff and carers.

1. DH –Children and Young People (2011) You're Welcome – Quality criteria for young people friendly health services.  
London: Department of Health.

Case study 2:

## Concept –Northwick Park Hospital (continued)

Having existing collaborative links helped to shape the process. A radiographer working at NPH and a lecturer at SC were able to approach other members of staff within their respective settings to see if the idea would work in principle. Once this was established the planning was able to begin.



Case study 2:  
**Initial approach to the college**

---

Claire, a member of Stanmore College gave the art department the connection with Northwick Park Hospital. The lecturing staff (Marshal and Sally) lined up a sight visit, spoke to Jeremy and then worked with him throughout the project.

The visual arts lecturers then created a working brief for the level 3 Extended Diploma students. The college and hospital staff met with the students and shared their vision of the project.

Case study 2:

## Brief for the project – from Northwick Park Hospital

For this project the brief was very flexible. The initial discussion with the art lecturers focused on the idea that the environment needed to be suitable for children and young people but that it would be used by a wide variety of patients and staff so needed to be suitable for all. We therefore knew that traditional ideas/themes such as ‘under the sea’ or ‘the zoo’ would not be suitable. The art teachers went away and discussed ideas that may be appropriate and developed an assignment brief.

Case study 2:  
**Initial thoughts from the students**

---

- Students explained they were “excited about the project because it was out of college and the project had a client that wasn’t a teacher.”
- The students were also excited because it was their “first real project.”

Case study 2:

## Initial visit for the staff to NPH

The initial visit to the site was made by college staff before the building was completed. The college staff were able to see the layout which helped them with the planning process.

The site manager was present and they were able to highlight the building and radiology regulations that needed to be considered. Initial ideas were considered and discussed and these were used to help form the assignment brief.

Case study 2:  
**From the ‘brief’ to reality**



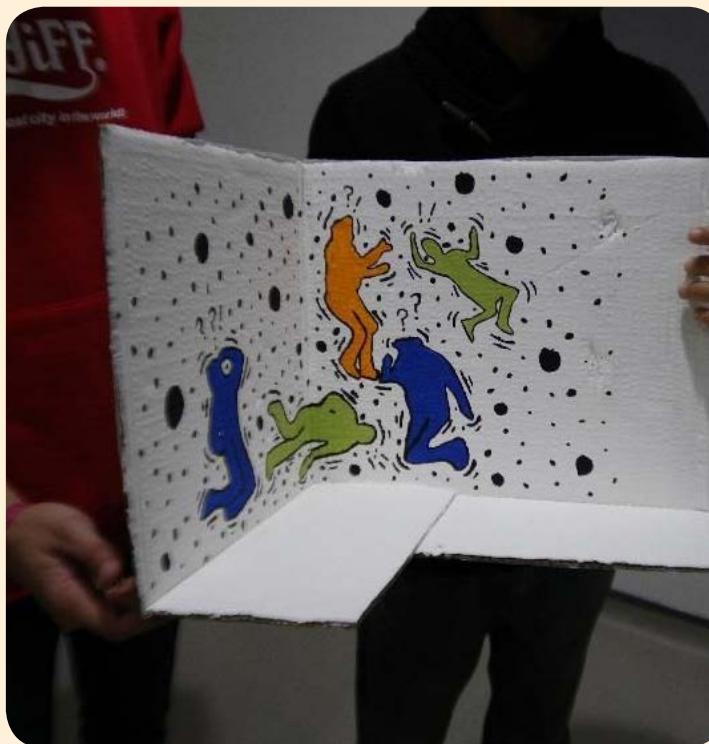
Case study 2:  
**Installation**



## Case study 2: Room 1

### Student testimony – Keyan

- Investigated the artists Keith Haring and his narratives. We thought about words like joy and happiness to have a positive attitude in the hospital
- The group laid in the poses to fit the words and drew around each other. These figurative shapes were cut out as a stencils.



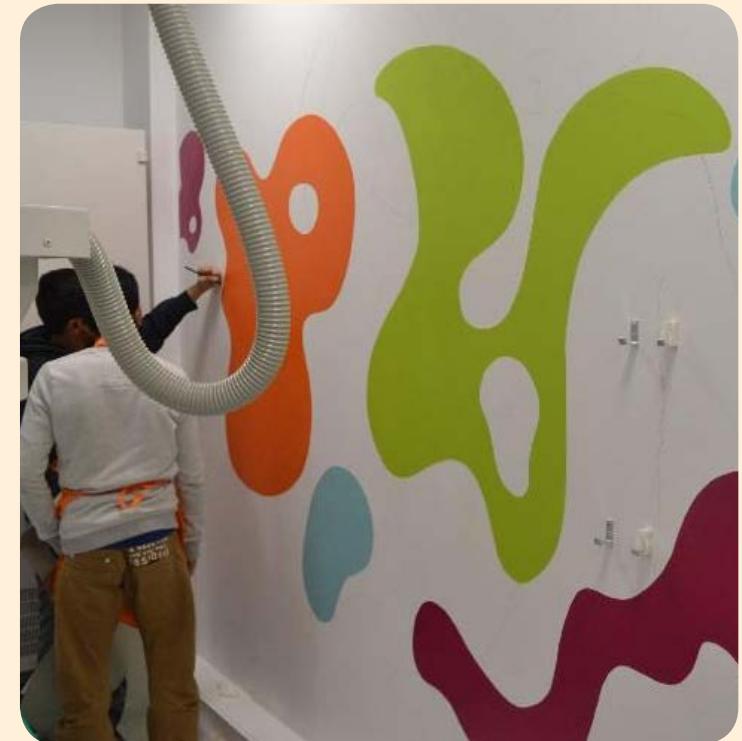
Case study 2:  
**Room 1 (continued)**



## Case study 2: Room 2

### Student testimony – Romarno

- The big coloured shapes in the background were to represent expressive emotions and to flow into one another. They were the background for the outline figures that were inspired by Keith Haring's hospital project.



Case study 2:  
**Room 2 (continued)**



## Case study 2: Room 3

### Student testimony – Jinisha

- Our group decided to make the figure start at the floor and move up to the ceiling and then back down again in a flowing manner. We wanted to express movement as the characters danced up and down. This was also accented by the shapes next to the figures as movement lines.



Case study 2:  
**Room 3 (continued)**



## Case study 2: Room 4

### Student testimony – Rianna

- In previously studying Julian Opie I was already inspired by his work. So I decided to research to see if he had any mural work. I used these works as a base for my design. Opie also showed movement in his styled figures so I created movement inspired by those works.
- I investigated the art movement Futurism and how they represented movement in repeating shapes and figures over the top of one another.
- The multiple coloured shapes are represented where the figures were previously, this gave the illusion of moving figures dancing to music, similarly to the figures that are present in previous iPod advertisements.



Case study 2:  
**Room 4 (continued)**



Case study 2:  
**Waiting area**



Case study 2:  
**Waiting area (continued)**



Case study 2:  
**Corridor**



Case study 2:

## Project evaluation – NPH

There are many ongoing benefits that have been identified as a direct result of this project. Importantly, it met the aim, to make the environment more child and young person friendly. The environment is now less clinical and therefore less intimidating. The effect of this is often unconscious but is evident in the demeanour of the patients, staff and other visitors.

An ongoing relationship has developed between the two organisations and plans are being discussed for the next project that is going to be completed. The project has also helped to change the perceptions that many of the staff had of teenagers. The staff that had contact with the students have commented on their professionalism, enthusiasm and their positivity. A very different view point from the stereotypical idea that is often portrayed by the media.

Case study 2:

## **Project evaluation – NPH (continued)**

**The minimal cost of this project was also a benefit. Only paying for the materials used enabled this project to go ahead. If labour costs needed to be paid then the project would not have been financially viable.**

**The only negative comments have been about the style of the art work. However, art is subjective so not all will like it or view it as necessary.**

**Overall the benefits of this project outweigh any negatives. The positive comments of those using the department highlight its success.**

Case study 2:  
**Project evaluation – SC**

**Engaging with Northwick Park Hospital was a great opportunity for the students to have a working brief that had a very tight time frame. The students had to show the client (Jeremy) their proposal and final design that needed to be changed with the clients specifications. The students had a tight deadline that the work had to be completed by to meet the opening of the department.**

Case study 2:  
**Acknowledgements**

- Claire Weldon and Jeremy Weldon
- Sally Gunnell and Marshal Mitchell
- 2nd year Extended Diploma art students



## How do healthcare environments influence experience?



The family room Longreach House, Cornwall. Image courtesy of Boex

Hubbuck (2009, p.67) explores variation in children's experiences and notes the interlinking relationship between 'the age of the child, and the extent of any trauma or distress caused by his or her illness, treatment and hospital experiences'. Children with chronic health conditions can provide valuable feedback over time and when this feedback is used to improve service provision, this also enhances adherence with appointments and treatment (van Staa et al 2011). For example, Curtis (2007) reports that children do not generally perceive the healthcare space itself to be 'scary', however, most research suggests that an understanding of environmental features is essential when trying to minimise fear and anxiety and promote a 'de-stressful' experience for children using healthcare services (Norton-Westwood 2012, Festini et al 2008, NHS Estates 2004a and 2004b).

The key factors that can influence environmental experiences used by architects and designers can be manipulated to generate different effects, according to differing needs (Kreitzer 2013b). These factors come under two broad categories:

**The elements of design:** Space, Form, Texture, Light, Colour, Lines, Point (i.e. focal point), and Time.

**The principles of design:** Rhythm, Proportion, Balance, Emphasis, Variety, Unity, Repetition, and Human Scale' (Kreitzer 2013b).

An example of this can be seen in the family room and reception area for Longreach Mental Health Hospital. Boex are a design company situated in Cornwall, and working with an NHS team from the Kings Fund Project used the geographical landscape of the area in 'the sensory room [which] has a naturalistic, seaside theme... to reflect the local area in the family room (Boex2015b).

This focus on the sea also reflects children's preferred thematic design and encompasses all elements of preference from across the age range, which alter with age (Coad and Coad 2008).

## Using the environment to promote safety and security

“

Parents and the family play a crucial role in maintaining a child's sense of safety, particularly in times of perceived threat.”

Within the five domains of the NHS Outcomes Framework, domain five specifically relates to 'Treating and caring for people in a safe environment; and protecting them from avoidable harm' (Department of Health 2013a, p.9). For children, the concept of 'being held' exemplifies the interplay between a supportive and facilitative environment when they are being cared for (Winnicott 1965, cited Ford 2011). This includes parents as the primary carers, the role of nurses and doctors and a child friendly environment.

Maslow (1943) developed a Theory of Human Motivation, identifying a hierarchy of needs that worked on differing levels of 'relative potency' linked to motivational behaviour. Maslow (1943, p.373) noted that 'if all the needs are unsatisfied, and the organism is then dominated by the physiological needs, all other needs may become simply non-existent or be pushed into the background'.

Once physiological needs are 'satisfied', other higher needs emerge, with the need for safety becoming the dominating potency. Although the original paper was primarily interested in adults, Maslow (1943, p.376) focused on children when discussing safety needs as 'these needs are more simple and obvious'.

Children react 'in a total manner' as they have yet to develop the coping skills typically used by adults (Norton-Westwood 2012, Maslow 1943) which makes them a particularly vulnerable population.

When hospitalised, this vulnerability increases for a variety of reasons which may include 'their illness, their stage of physical, intellectual and emotional development, and because they have so little control over what is happening to them (Livesley and Long 2013, p.1293).

Maslow (1943, p.377) identified illness as a threat to the child which would make them feel unsafe, noting that 'the appearance of the whole world suddenly changes from sunniness to darkness, so to speak, and becomes a place in which anything at all might happen, in which previously stable things have suddenly become unstable'.

Parents and the family play a crucial role in maintaining a child's sense of safety, particularly in times of perceived threat. The child believes 'he has all-powerful parents who protect and shield him from harm' (Maslow 1943, p.378). Maintaining health and treating illness sometimes requires unpleasant and painful procedures and this may be seen as a betrayal by the child and the parents when they feel unable to offer their child their protection. In these circumstances, the environment needs to be manipulated to enable parents to 'shelter, support and console' their child (Forsner et al 2009, p.527, Roberts 2010).

Children need to make sense of the unfamiliar hospital environment, thereby enabling them to 'know how to be and what to do' (Curtis 2007) which in turn allows them to have confidence in the hospital environment (Bull et al 2007).

## Using the environment to promote safety and security (continued)

“

Children know how to ‘operate’ within a playful environment...”

In order to do this, they use knowledge from pre-existing schemas of other familiar environments such as their school or own homes.

This enables them to transform the hospital environment into somewhere that feels ‘safe’ and manageable (Curtis 2007, Dalke et al 2005). This is particularly important when they stay for extended periods of time and one way in which this can be done is through the personalisation of their own bedside spaces, as discussed later (Lambert et al 2013, Bishop 2008, Bull et al 2007, James et al 2007, Coyne 2006).

Promoting a sense of safety is where the ‘principles of design’ can be utilised to provide the child with a sense of balance and rhythm that reflects their normal, routine daily lives. Hence the importance of play and recreation.

Play and recreational activities provide a bridge to normality (Hubbuck 2009) and a world beyond illness (Great Ormond Street Hospital for Children NHS Foundation Trust 2015b).

This works through an ‘instinctive connection’ which enables children to experience a feeling of safety and security (Bull et al 2007). Children know how to ‘operate’ within a playful environment and this is exemplified through case studies 1 and 5.

## The changing face of healthcare environments



A decade ago, there was a realisation that healthcare environments needed to reflect the needs of a wider range of children and the use of 'primary colours, geometric shapes, and cartoon characters' were no longer seen as appropriate (Kovacs Silvis 2013a, van Staa et al 2011, Coad and Coad 2008, James et al 2007). The following quote exemplifies this: "The environment, it's set up for little kids. I mean, you go to a paediatrics' office and a 3 year old would like what's in there. There's Winnie the Pooh wallpaper and there are little balloons and clowns all over the place, and I'm like 17 years old now" (Norton-Westwood 2012, p.9). James et al (2007) also note that 'children as young as 7 feel the needs of only the youngest occupants are being met in hospitals in relation to décor, activities and personal space'.

Kovacs Silvis (2013a) identifies the move away from a 'primarily infant population'. Thanks to advancements in the treatment of illnesses that originate in childhood such as cystic fibrosis and sickle cell (Davis, cited Kovacs Silvis 2013a) there has been the emergence of a new generation of long term service users who will be visiting the same facilities into their 20's (Kovacs Silvis 2013a). Engagement with the environment seems to be a key factor and this occurs from the moment children enter a healthcare facility (Adams et al 2010).

Owens (cited Kovacs Silvis 2013b) identifies the need to provide flexibility with an eye to the future (European Healthcare Design 2015) to address the 'shifts in operational care models'. This is currently being seen in the move of healthcare facilities into the community (Royal College of Nursing 2014) and the move away from centralised systems that are less responsive to the needs of local communities.

A recent example which has been flagged up as 'existing best practice' is the new Children's Unit at Salisbury District Hospital (Patient Experience Network 2013). The design approach was inclusive, involving children, families and staff, resulting in a high quality environment that serves the needs of the local community (Patient Experience Network 2013). The process and result has been captured and illustrated through the publication Waterworld and Treetops: Designed with Children for Children by Penny Bayliss Robbins (2012).

## When asked, children prefer...



1.



2.

Colour preference is for paler to mid-colour ranges with blue-green as a noted favourite (Norton-Westwood 2012, Coad and Coad 2008). This preference may be explained by research undertaken by Valdez and Mehrabian (1994, cited Lankston et al 2010, p.496) who report 'the short wavelength blues and greens generally elicited more pleasure than the longer wavelength reds and yellows'. Langston et al (2010) go on to suggest that preferences for nature scenes may be due to the prominence of blues and greens within these images.

Older children prefer a darker 'range of blues and a range of mid, warm yellow-oranges, 'bold' pinks, silver and black' (Coad and Coad 2008, p.41, Curtis 2007). This is exemplified by the 'Everybody Centre' which is part of the Young Person's Healthcare Centre in Blackburn.

Young people were heavily involved in the initial design process and they chose darker shades of yellow, blue, green and purple for the consulting rooms. Colour is used to define each private consulting room, giving young people a choice of room depending on their mood (Boex n.d.).

Thematic design linked to the 'sea, water, beach and ocean' followed by 'metal, glitter or shiny', then nature and then animals (Coad and Coad 2008).

1. Consultation Rooms, The Everybody: Young Persons Resource Centre. Image courtesy of Boex

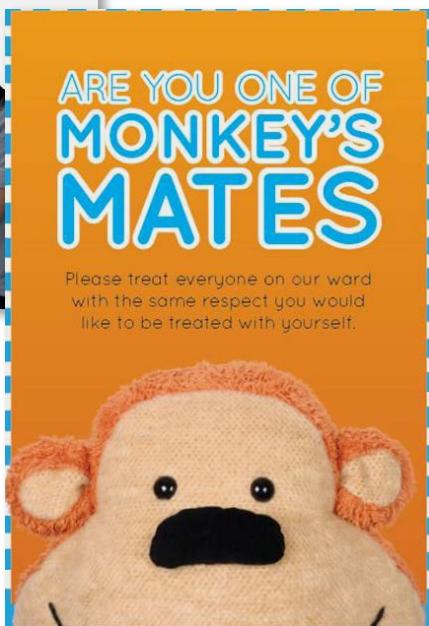
2. The Children's Unit at Salisbury District Hospital. Image courtesy of Penny Bayliss Robbins

## First impressions

1.



2.



Kennedy (2010) advocated the need for environments to be welcoming and the entrance to a healthcare facility can often set the scene for what is to follow (Lambert et al 2014).

Bishop (2012) reports children's perceptions of key factors they consider to be important when they enter an environment and these include the aesthetic of the environment, the volume of age-appropriate resources and the welcome they receive – all of which alter according to the age of the child (Bishop 2012).

The physical environment provides the first impression of a healthcare setting and has a significant impact on the patients' 'perception of care and overall experience' (Kreitzer 2012). External entrances should consider a child's perspective of scale, with considerations such as external illumination being lowered in height (Dalke et al 2005). James et al (2007) report that children do not like 'untidy, dirty or crowded hospital spaces' and children specifically state that 'the hospital entrance should appear welcoming, inviting and clean... with welcoming signs specifically geared towards children' (Coad and Coad 2008, p.40).

First impressions of the healthcare setting are considered to be 'extremely important' (NHS Estates 2004a) and this is now exemplified through The Fifteen Steps Challenge (NHS Institute for Innovation and Improvement 2013). Collaborative working between patients, staff and service users has enabled first impressions to be explored, leading to a better understanding of what constitutes high quality care and how it should look, feel, sound and smell like (NHS Institute for Innovation and Improvement 2012, p.6).

Note how the significance of the sensory experience is stressed (Randall and Hallowell 2012, NHS Estates 2004a). Within the documentation for The Fifteen Steps Challenge, an illustration is provided to give visual cues of what to look for when reviewing the area under consideration. It provides a graphic reflection of many issues raised by children in terms of the perceived 'child-friendliness' of an environment through the physical space, social space and symbolic space (Gesler et al 2004).

Wall coverings can convey powerful messages for children and consideration needs to be given to any images when displaying posters or any artwork, including the age groups being addressed (Norton-Westwood 2012). For example, while human anatomy posters may be educational, for children they can appear frightening and scary (Norton-Westwood 2012).

Posters linked to a Trust's Zero Tolerance Policy which feature graphic images of acts of aggression or their consequences are becoming less common and are being replaced by images that promote respectful relationships between staff and people who use healthcare services (NHS Business Services Authority 2012).

1. Image courtesy of NHS Improving Quality

2. Images of Monkey courtesy of Monkey Well-being [www.monkeywellbeing.com](http://www.monkeywellbeing.com)

## First impressions (continued)

The graphic used to illustrate the Fifteen Steps Challenge provides a simple overview of all the environmental variables that impact on a child's experience of healthcare provision (NHS Institute for Innovation and Improvement 2013).



## Way-finding



Mosaics, floor markers and signs at the Children's Unit, Salisbury District Hospital.  
Images courtesy of Penny Bayliss Robbins

Children want a 'clear sense of their position within the context of the whole hospital environment' (Lambert et al 2014, p.64). Way-finding provides a means of navigation around unfamiliar environments with 'routes determined by form, colour, lighting and other design criteria' (Collier 2012) and according to Dalke et al (2005) most colour strategies within hospital settings are linked to way-finding.

The way children navigate through the environment differs to that of adults, so engaging with children is important when developing way-finding strategies (Ives 2013). Alder Hey Children's NHS Foundation Trust (2012, p.20) suggest the internal layout of their new hospital will enable 'intuitive way-finding' due to the 'simplistic and logical design'. Ives (2013) compared the development of two way-finding systems in hospitals, both of which were designed with children in mind – The Royal Children's Hospital (RCH) in Melbourne and Great Ormond Street Hospital (GOSH) in London. The process undertaken at GOSH is covered within case study 3.

The RCH project took two years to finalise and the research stage involved over 600 children. One finding noted that children find the use of clinical terminology confusing and intimidating and therefore, 'friendlier names' that linked to artwork on the walls in differing areas of the hospital were used i.e. Koala Ward and Possum Ward (Ives 2013). In both hospitals, the natural world provides thematic design, with differing levels having a different theme. Pridding (cited Collins 2012) notes that consistency is an important feature in way-finding and in both hospitals, each level has its own colour scheme, which links to the theme for that level. This fits in with earlier research undertaken by

Coad and Coad (2008) which noted that children identify the need for signposting, preferring the use of thematic design and colour. Colours used were deliberately bright to attract the child's attention (Ives 2013), which seems to be a popular strategy. "We used vibrant colours in limited areas to define way finding and help comfort patients without using it throughout, keeping the space open and airy, and allowing lots of natural light to come in" (Davis, cited Kovacs Silvis 2013a), which also reflects the approach at Alder Hey in the Park (Alder Hey Children's NHS Foundation Trust 2015a).

At GOSH, the hospital is spread over six buildings and each building has its own colour identity (Ives 2013, Lucas 2010). This concept was initially developed from a lego model of the hospital site in the reception area whereby each building was represented by a different colour (Lucas 2010). The way finding system has two aims – 'to direct and to distract' thereby promoting a therapeutic environment, with animals and graphics being used within treatment rooms as well as in corridors and wards (Lucas 2010). Salisbury District Hospital has recently developed a dedicated Children's Unit within the hospital, and as part of the development process, 1100 children were involved over a two year period (Bayliss Robbins 2012). Way-finding integrates mosaics, floor markers and signs. The floor markers can also be used to make clinical assessments easier to explain and more fun (Bayliss Robbins 2012).

Artwork can also be used as a means of way finding within the environment as it provides landmarks which can be used as reference points (Bishop 2012, Bayliss-Robbins, 2012).

## Entrances, reception and waiting areas

1.



2.



1. Children's Waiting Area in the Children's Unit at Salisbury District Hospital. Image courtesy of Boex  
2. Children's Room in A&E, Frenchay Hospital. Image courtesy of Boex

Children place significance on non-clinical areas of the healthcare setting (Adams et al 2010), particularly when they first enter the environment (Lambert et al 2014). 'Reception areas need to be welcoming to invite people to come further into the building, like the lounge of a nice hotel' (NHS Estates 2004a, p.19). They also need to be 'interesting and to their scale' (Dalke et al 2005, p.348).

Waiting can induce anxiety and fear in children accessing healthcare services (Biddiss et al 2011) but this can be alleviated through a reduction in environmental stressors (Sfandyarifard 2013).

Waiting areas need to appeal to children (Dalke et al 2005) with opportunities to 'engage' with the environment (Boex 2013, Dalke et al 2005). This can be done through the use of art, which provides a focal point of interest and a source of conversation for families (Powell 2015) as well as a means of positive distraction (Lankston et al 2010). Other forms of positive distractions include visual-audio stimuli presented on a plasma TV (Lankston et al 2010), and this is particularly effective if it is interactive (Biddiss et al 2011).

Quan and Joseph (2011) highlighted the findings of Nanda (2010) and Pati and Nanda (2011) who noted that 'nature photographs on canvas, window films with garden scenes, and cloud patterns attracted patients' during waiting time, and significantly reduced patients' restless behaviour and people watching, all of which helped calm children'. Many of these themes are featured within the interior design of the waiting area in the Children's Unit at Salisbury District Hospital which was designed with children from the local community (Boex 2015a, Bayliss Robbins 2012).

Gesler et al (2004) note that the colour scheme within waiting areas can induce both positive and negative feelings. Children prefer a single colour scheme (although not white) with accent colours that add interest to the space (Coad and Coad 2008). Colours such as 'mid to warm blue, pastel green and accent yellow, cream or orange' are preferred (Coad and Coad 2008, p.41). An example of this can be seen in the Children's Room that is an integral part of the A&E waiting area at the Frenchay Hospital in Bristol.

## Corridors



The Teenage Cancer Trust – part of Ward 15 in Birmingham Children's Hospital  
Images courtesy of Birmingham Children's Hospital

Children understand the function of corridors as a means of getting somewhere, but as they travel along the corridor, they want them to be eye catching, welcoming and clean (Coad and Coad 2008). Children prefer corridors to be a single colour or zoned areas with a single colour. Preference appears to be for warm, welcoming and inviting colours, such as warm blue, pastel green and pale to mid yellow or pale orange (Coad and Coad 2008, Curtis 2007). However, children will also use corridors as a means of socialisation, as they do in school, particularly when appropriate facilities are not available (Curtis 2007).

The role of visual arts is particularly important and can be used to enhance feelings of health and well-being and promote a healing environment (Paintings in Hospitals 2015a). For example, the following quote from the Inpatient Services Manager at Mile End Hospital in London states 'The pictures have been inspirational and made the corridors a much more social space with patients, visitors and staff stopping to look, read and talk about them' (Paintings in Hospitals 2015a).

The main corridor at Alder Hey Hospital features a blackbird's song, and the hospital has previously worked with Chris Watson, a leading sound recordist, together with children and their parents to make a recording of birdsong called 'Wild song at Dawn' (Alder Hey Children's NHS Foundation Trust 2015c). The project involved children working with Mr Watson for three days in the local Park, recording 'greenfinches, robins, blackbirds and song thrushes as well as the rain and the wind'. This has subsequently been used as a means of distraction for children, resulting in a calmer clinical environment (Smith 2010).

The other aspect of the environment that can be enhanced is the ceiling and this is particularly beneficial for children who are lying down during transfer i.e. going to theatre. With the advent of digital print technology, ceiling tiles can now be printed on directly which can provide new opportunities for adding interest to previous sterile environments such as corridors (Boex 2012).

## The importance of ceilings

1.



2.



1. Integrated ceiling tiles – Salisbury District Hospital . Image courtesy of Penny Bayliss Robbins  
2. Fibre optic ceiling tile. Image courtesy of Experia

Ceilings are important features of healthcare environments and contribute to an aesthetically pleasing, clean and welcoming environment (Lambert et al 2014, Anonymous 2011). This includes elements of the internal environment which are known to influence sensory experiences and the speed of patient recovery, such as sound and lighting (Anonymous 2011).

However, the healthcare environment provides unique challenges as noted by McQue (2009) who states “remember floor, wall and ceiling finishes should not compromise clinical functionality and cleanliness”. Infection control considerations will alter according to the function of the clinical environment. For example, operating theatres and burns units are categorised as ‘very high risk’ in terms of clinical hygiene whereas general wards and out patients are considered areas of ‘significant risk’ (Anonymous 2011).

This will alter what can be done in terms of modifying the environment once it has been ‘built’, although consideration of infection control issues at the planning or refurbishment stage can mean features can be incorporated that will enhance the experience for children when accessing health service provision.

The quality of the acoustic environment is cited as a significant factor by children when asked about their experiences of healthcare (van Staa et al 2011, Curtis 2007, Coyne 2006, NHS Estates 2004b), with elevated levels of noise being a major dislike, particularly at night time (Herbert et al 2104, Linder and Christian 2011). The use of ceiling tiles can be used to absorb sound, particularly in long, wide corridors that traditionally have ‘hard hygienic floors

and wall coverings’, which can help to control the build up of noise (Anonymous 2011). Ceilings can also help to reduce transmission of noise between rooms, thereby promoting privacy, confidentiality and levels of concentration (Anonymous 2011).

The transmission of natural light is particularly significant for promoting a ‘healing environment’ (Alder Hey Children’s NHS Trust 2015a, Norton-Westwood 2012, Bromley 2012, NHS Estates 2004b) and ceilings can be finished with ‘high levels of light reflectance... to help daylight penetrate into a building’ (Anonymous 2011, p.19).

This can also contribute to cost saving linked to energy usage. Modification of ceilings through the use of different materials can change their look and feel (Lambert et al 2014, Anonymous 2011) and this can provide ‘built in’ opportunities for distraction to ‘alleviate anxiety, boredom and stress’ (Bayliss Robbins 2012, p.15, Phillips Medical Systems 2007). For children who may be positioned so they look upwards on a waterbed or soft padding (Experia2014), or while undergoing clinical procedures, features of the ceiling can be altered through the use of the integrated ceiling tiles with pictures or fibre optic lights as part of a mirrored tile. Equipment that has traditionally been restricted to use within dedicated sensory rooms is now being incorporated into more areas, and the use of projection facilities and wireless technology widens the scope for adapting the ceiling area.

# Imaging



Over the past six years, the Society of Radiographers (2015) has sought to address concerns about the quality of imaging in adult hospitals, acknowledging the role of the environment within practice standards (Society and College of Radiographers 2009). Mathers et al (2011) identify the importance of creating a child-friendly environment, noting how imaging environments can evoke feelings of anxiety due to their unfamiliarity.

This extends to non-imaging areas such as waiting rooms and changing areas, and a fact sheet that gives advice on how to promote a more positive experience in these areas has been produced (Society of Radiographers 2015).

Advice about waiting areas reminds practitioners that the 'quality of the waiting environment influences perception of quality of care and caregivers and is significantly associated with reduced anxiety'.

It also provides suggestions on the provision of age and developmental stage appropriate toys, whilst raising awareness of the need to be mindful of infection control requirements (Society of Radiographers 2015).

Imaging tables are notoriously hard and cold for children and this induces feelings of anxiety and therefore they are considered unfriendly (Norton-Westwood 2012).

However, these are essential to the successful completion of the imaging process and demonstrates the conflict between functionality and aesthetic features such as comfort.

Phillips Medical Systems (2007) published publicity material for a new CT suite with design features that could be altered to reflect individual patient needs and preferences. Although this system may now be considered outdated, it provides a useful overview of features designed to 'relax patients and relieve anxiety, through opportunities to manipulate the environment. These included:

- Selectable themes to provide positive distraction' which help younger patients to remain still and control their breathing, which makes the process easier for all concerned and produces optimal quality images
- Dynamic lighting which corresponds to the chosen theme
- Sound system to provide soothing audio which also corresponds to the chosen theme
- Ceiling projections
- Storage to enable a clutter-free environment
- Side wall projection

The use of protectors and lights within x-ray rooms is noted within a small minority of departments... but this is a start (Mathers et al 2011).

## Staying in hospital



Children state that they do not want a hospital to look like a hospital (Bishop 2012) and this becomes increasingly significant the longer the child has to stay (Bishop 2012). This may be linked to perceived levels of boredom (Said 2007) which, according to children, reportedly increase with the length of stay (Festini et al 2008).

When Coad and Coad (2008) explored children's perception of thematic design, all the participants liked the idea of having a theme for each ward, and the most popular themes were the sea, nature, animals and shapes.

In terms of colour, options were divided between the use of a single colour throughout the ward, to multiple colours used in combination: 'Preferred single colours were blue, accent and pastel yellow and pastel orange while colour combinations were shades of blue, orange, pink, neutral and yellows' (Coad and Coad 2008, p.43). Children express the need for comfort (Lambert et al 2014, Farjou et al 2013, Bishop 2008), and that the ward should feel like a 'home from home' (Alder Hey Children's NHS Foundation Trust 2015a, Lambert et al 2013, Ekra and Gjengedal et al 2012, van Staa et al 2011), with accessories such as cushions, pictures, toys, photographs, lamps and rugs' (Lambert et al 2014, Gibson et al 2010, Coad and Coad 2008).

Children like to be able to control environmental variables such as lighting (Curtis 2007) and this is similar to generic findings whereby outcomes in terms of patient satisfaction are clearly linked to patient comfort (Kreitzer 2012, Bromley 2012, Quan and Joseph 2011). Expectations for children's access to their parents have changed significantly over the past half a century and children express that having access to and the ability to

accommodate peers/parents close by provides a sense of comfort and security (Farjou et al 2013, Coyne and Kirwan 2012, Norton-Westwood 2012, p.9, Roberts 2010, Gibson et al 2010). Equally, parents want to be with their child in hospital, and those children who are separated from their parents, are at increased risk of the physical and emotional effects of separation (Roberts 2010). However, children also express a dislike for cramped spaces (Farjou et al 2013), particularly in relation to seating arrangements for visitors (Curtis 2007).

Children reportedly do not like shared bathrooms (Lambert et al 2014) particularly with visitors, as this was seen as being unhygienic (James et al 2007). This has been factored into the new Alder Hey Children's Hospital where '75% of beds will be single, en-suite rooms with pull-out beds for parents' (Alder Hey Children's NHS Foundation Trust 2015a).

Children want to be able to personalise space (Lambert et al 2013, Bishop 2008, Bull et al 2007, Coyne 2006), with toys, photographs and activities (Gibson et al 2010), particularly for children who stay for extended time periods (Lambert et al 2014). However, a lack of space sometimes mean this is not always possible (James et al 2007).

Infection control measures can also cause restrictions, particularly in relation to toys, although this can be minimised through keeping rooms 'clutter free' to enable routine cleaning to be undertaken effectively (Central Manchester University Hospitals 2015).

## The importance of sleep

“

Optimum conditions are a quiet, comfortable and uncluttered room that is well ventilated and not too warm.”

Sleep is known to be extremely important for children's holistic well-being and all children need good quality sleep for normal growth and development (NHS Choices 2013c) particularly for emotional well-being and mental health (McGrath n.d.).

Conversely, a lack of sleep can result in extremes of behaviour (NHS Choices 2013c) and impaired immune function and hormone regulation (Linder and Christian 2011).

For children who are ill, the restorative and healing benefits of sleep are particularly important (Herbert et al 2014) and therefore, establishing an environment that is conducive to sleep for all children in hospital should be a priority. Optimum conditions are a quiet, comfortable and uncluttered room that is well ventilated and not too warm (McGrath n.d.).

The Great Ormond Street Hospital for Children NHS Foundation Trust (GOSH) (2015a) provide information for patients and within the Children's Zone on the website, there is a page with tips on 'Getting a good night's sleep'. These include ways to keep cool, reduce the noise levels, the importance of creating a bedtime routine and if at all possible, ensuring some exercise has been taken in preparation for sleep.

Being a hospital inpatient can result in reduced night time sleep duration for a significant minority of children when compared to the sleep patterns of healthy children (Herbert et al 2014, Clift et al 2007). The degree of sleep loss can vary by as much as 12.5% a night and noticeably affects young children aged 2–5 years of age, with minimal change noticed in children aged 14–18 years

(Herbert et al 2014). However, Herbert et al (2014) identified a correlation between children's sleeping in the week prior to admission, noting that those who had difficulty sleeping subsequently had higher levels of disturbed sleep when they were in hospital.

This was cited as the 'single most important factor' and could be used as a predictor of sleep quality for children at high risk of disturbed sleep when they come into hospital (Herbert et al 2014).

For children with cancer, the average sleep loss has been reported to be as much as 20–25% (Herbert et al 2014) but a different set of causative factors may be responsible with this specific group of patients.

In a study undertaken by Linder and Christian (2011) looking specifically at paediatric inpatients with cancer who were receiving chemotherapy, additional problems included heightened acuity to sensory features and fatigue, due to treatment regimes and the effects of the illness itself, a feature also noted by Herbert et al (2014).

Children and young people report frequent disruptions and noises as contributory factors leading to fragmented sleep, both of which result in reduced sleep minutes (Herbert et al 2014, Crammer and Davenport 2013, Linder and Christian 2011, Clift et al 2007, Bull et al 2007, Coyne 2006). Interactions with nursing staff is a significant factor, contributing to 25% of episodes of awakening in a study conducted by Herbert et al (2014).

## The importance of sleep (continued)

In particular, sound levels rise noticeably when clinical tasks are undertaken during the night and these are known to be disruptive to normal sleep routines (Herbert et al 2014, Linder and Christian 2011, Clift 2007).

According to recommended noise levels in healthcare settings set out by the World Health Organisation, the average sound level in rooms where treatment is occurring should be 35 decibels (dB) or less and at the patient's bedside it should be no more than 45 dB (Linder and Christian 2011). Linder and Christian (2011) report previous findings showing night time noise levels consistently above 50 dB with peaks up to 120 dB in a Paediatric Intensive Care Unit.

This suggests that educating hospital staff about the factors that can affect children's sleep, particularly noises levels and entering and exiting rooms, is a modifiable environmental factor which could make a difference to children's experience of hospitalisation (Herbert et al 2014, Crammer and Davenport 2013, Linder and Christian 2011, Coyne 2006).

## Socialisation



According to Curtis (2007, p.20) 'hospital spaces are also social spaces that are facilitated or inhibited by their design'. For example, seating arrangements in out-patient departments are often perceived by children to inhibit socialisation (Curtis 2007, Ulrich 2004). With play activities often placed within the central area of the room, seating around the edges mean older children have to sit on the peripheral of the room with their parents (James et al 2007). Young people themselves were engaged in the design of Everybody Centre, which provides health and well-being services for young people aged 14–24 years in Blackburn. The finished waiting area is subdivided using colourful furniture that reflects the interior of the 'consulting pods' and attempts to 'remove the stigma' of traditional healthcare facilities (Boex n.d.). It also gives young people a choice of where they want to sit.

Socialisation is important for children of all ages and space should be made available to enable appropriate opportunities for socialisation to occur and be controlled across the age range (van der Riet et al 2014, Alder Hey Children's NHS Trust 2012, Coyne and Kirwan 2012, Ford 2011). For example, a number of children's hospitals have Guides and Scout groups (Evelina London 2015).

For children who have to stay in hospital, there are mixed messages in terms of what sort of environment is best suited to meet their needs (Norton-Westwood 2012). Preferences around rooming include the type of room – single, double bedded or multi-bedded rooms. Children do express preferences, with girls significantly more likely to prefer a single room (Norton Westwood 2012, Said 2007) although James et al (2007) counter this, saying girls prefer multi-bed bays

so they can talk to each other. Adolescents are split between single occupancy or sharing a room (Norton-Westwood 2012, Gibson et al 2010). The preference for single occupancy is reflected in generic findings by Quan and Joseph (2011) who note that patient satisfaction is higher for those in single occupancy rooms as opposed to shared occupancy, with multi bed rooms scoring lowest. However, it should be noted that single room occupancy is not associated with improved sleep quality, particularly in relation to disturbances caused by other occupants of the room in shared bays or rooms (Herbert et al 2014).

Children who feel sick or tired appreciate their own room (Ekra and Gjengedal 2012) but on occasions, cubicles can be isolating and induce boredom (Gibson et al 2010, Curtis 2007). Children report their preference for space and independence unless they are seriously ill, in which case they value being close to the nursing station (Norton-Westwood 2012) and in these circumstance, leaving the room door open can be seen as important for patients.

However, children are aware that socialisation can only be facilitated if the risk of infection is not present (Curtis 2007) and this is particularly important for immuno suppressed patients.

Teenage cancer patients particularly value opportunities to socialise regularly on a formal basis with other teenagers with cancer (Farjou et al 2013, Gibson et al 2010).

## Promoting privacy and dignity

“

Segregation by age is considered more important than by gender and children's preferences should be taken into consideration.”

### Privacy

According to Oxford University Press (2015b) privacy is ‘a state in which one is not observed or disturbed by other people’ and the promotion of privacy for all children is enshrined in law through article 16 of the UNCRC. Considering the definition’s onus on protection from ‘other people’, the role of the environment can be seen as a crucial component in promoting and maintaining privacy. Although the perception that privacy is particularly important for young people, this ignores the needs of much younger children, who also require privacy, albeit, in a differing context (Curtis 2007).

It was interesting to note that there was limited coverage of privacy or dignity within the literature reviewed in relation to children’s perspectives on privacy linked to the environment. When privacy was discussed, it was usually related to rooming for children staying in hospital.

Children identify that privacy is dependent on the type of room they inhabit, with children in single rooms having the greatest degree of control (Lambert et al 2014). Attention to privacy for young people is important (van Staa et al 2011, Gibson et al 2010) particularly when single occupancy rooming options are not available (Farjou et al 2013). However, children in multi occupancy rooms use the curtains to gain privacy, which also provides a degree of control over their environment (Lambert et al 2014). This is promoted within the setting, by encouraging children to pull their curtains round when they are changing.

Decisions around occupancy are based on ‘physical, psychological and social needs’(The Hillingdon Hospitals NHS Foundation Trust 2013) as well as clinical needs (Birmingham Children’s Hospital n.d.e). Guidance on accommodation is provided through the Hospital Standard from the NSF for children (Chief Nursing Officer 2007) and this recognises children’s right to privacy and the need for consideration of the child’s age and stage of development.

Segregation by age is considered more important than by gender and children’s preferences should be taken into consideration (The Hillingdon Hospitals NHS Foundation Trust 2013, Birmingham Children’s Hospital n.d.e, Chief Nursing Officer 2007). Children are aware of the need for design to cater for both genders (Lambert et al 2013) and all age ranges, including adults who use the facilities (Coad and Coad 2008). Gender segregation is not generally seen as an issue, which is often a reflection of their school experiences (Curtis 2007).

## Promoting privacy and dignity (continued)

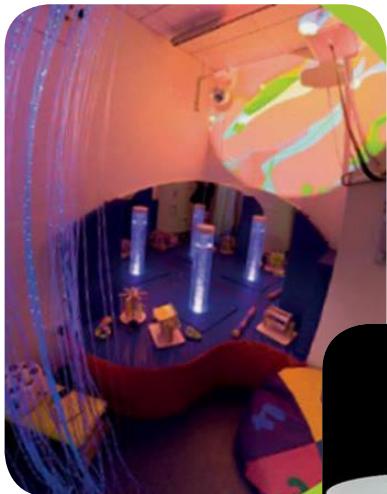
### Dignity

Treating children with dignity and respect fulfils children's rights (Söderbäck et al 2011) and one way in which this has recently been promoted is through The Dignity Giving Suit. The traditional hospital gown opens at the back and 'having to wear an ill-fitting, uncomfortable and fiddly hospital gown did little to ease their apprehension' (Birmingham Children's Hospital n.d.b).

Using feedback from young people and their families, a two piece suit that has multiple points of access was developed, allowing 'dignified access for their procedure and follow up care.

The material used is 'comfortable, warm and hardwearing' and is proving to be more cost effective than the traditional lightweight gown. Perhaps most importantly, feedback has been very positive from the children themselves and provides a novel approach to enhances dignity across the age range (Birmingham Children's Hospital n.d.e).

## Engaging the sensory experience



1.



2.

Olds (1991, cited Bishop 2012) explored the concept of difference-within-sameness and the need for changes in sensory stimuli to keep engagement within the environment positive. Using examples from nature such as a breeze or a babbling brook, Olds noted the features do not have to alter radically to maintain new interest and engagement. Children appreciate the role of a changing environment as a source of distraction, as noted by one participant who suggested 'everywhere we look there should be something new to look at' (Coad and Coad 2008, p.41).

The internal environment is influenced by many elements, but most noticeably include light, space, colour, shape, texture and artwork. It also includes sensory experiences such as sounds, aromas and sensation (Kreitzer 2013c). Children use touch more than adults and will use this sense to explore their environment, particularly at ground level (Dalke et al 2005). Therefore, the types and textures that make up the environment need to be considered, ranging from flooring, through to walls and ceilings (McGrath 2009). In the case of dental experiences, taste of gloves used by the dentist were often disliked (Boye et al 2011).

NHS Estates (2004b, p.7) advocate the role of engaging the senses through 'sense-sensitive design involving all sensory receptors at varied stages of child development'. NHS Estates (2004a) provides an excellent chapter dedicated to the promotion of design principles relating to each of the five senses entitled 'Sense-sensitive design' and resource. This is worthy of careful consideration.

The importance of sensory experiences for children with complex needs is well documented and 'sensory stimulation rooms' can be invaluable. A sensory room has been provided for patients with special needs as part of the Children's Unit at Salisbury Hospital, which has improved the patient experience (Patient Experience Network 2013, Bayliss Robbins 2012).

The provision of sensory experiences through the use of mobile sensory units is becoming increasingly popular. Sullivan-Wallace (cited Tonkin 2014) provides a case study of a child aged five months who came onto the paediatric ward and who stayed for several months. The child was unable to visit the sensory room due to her complex medical needs but the use of a mobile sensory trolley meant the child's room could be transformed into a multi-sensory environment. Music was linked to the differing activities which were planned to flow, allowing the child to anticipate what would come next. The play sessions also engaged the parents who had previously not had the confidence to play with their child.

An extended commentary on sensory environments has been provided.

1. Image courtesy of Penny Bayliss Robbins

2. Portable sensory equipment. Image courtesy of Experia

## Addressing complex needs

“

Children with chronic health conditions can provide valuable feedback over time and when this feedback is used to improve service provision, this also enhances adherence with appointments and treatment.”

Children with complex health needs bring with them an inherent design challenge as some families essentially ‘move in’ during the course of a child’s treatment. This means that access to amenities that reflect the functionality of a home environment need to be available throughout the whole hospital and not just in the patient’s room (Kovacs Silvis 2013a). Children with chronic health conditions can provide valuable feedback over time and when this feedback is used to improve service provision, this also enhances adherence with appointments and treatment (van Staa et al 2011).

Adam Bojelian has spent half of his 14 years in hospital and is a recognised expert with regard to the hospital environment, having been cared for in two District General Hospitals, two Tertiary Hospitals and three specialist children’s hospitals’ (Bojelian 2014c).

Adam communicates through blinking and writes a blog to share his experiences (Bojelian 2015, Webster 2014). Adam also regularly tweets @Adsthepoet and has 2321 followers (as of 2nd March 2015). An active FUNdraiser and promoter of Disability Matters, the following blog post from 4th June 2014 provides testimony as to why all children should be given the opportunity to share their experiences.

My #FUNFUND for LEEDS CHILDREN’S HOSPITAL APPEAL #WeAllMatter! (Bojelian 2014b)

“At the moment I am fundraising for Leeds Children’s Hospital Appeal, the hospital I have been in since September 2013. That is along time to be in hospital, especially if like me you are in isolation. I want to thank the staff at Leeds for the wonderful care I have received here.

The nurses, doctors and all the staff are brilliant, but I do miss out on FUN! I miss going to school, I miss

doing fun things and I miss seeing my friends and wider family, Luckily my TWITTER friends are really good at keeping me happy and connected to the world. I had a brilliant twitter birthday party, but more FUN would make my life so much better. I want to flourish not just survive!

I am sure there are many other boys and girls in my hospital who would also like more FUN. The Leeds Children’s Hospital Appeal does a great job, but to me it seems that often the same hospitals and or the same wards always seem to benefit from charities and the same hospitals and wards always seem to miss out, for example when celebrities are fundraising or visiting. To me that seems wrong. It is brilliant that the children in those hospitals and on those wards get such good facilities and FUN, they should, but I don’t understand why ALL children and young people in all hospitals and in all wards shouldn’t share in the FUN, also have fun visitors and lots of entertainment too. #WeAllMatter!

So I want to CHANGE THIS, starting with my ward and my hospital. I want ALL children and young people in Leeds Children’s Hospital, but most especially those who have long stays & who are very poorly to have lots of fun, entertainment and visitors. It shouldn’t depend on your medical condition or your geographical location whether or not you have FUN when you are in hospital. Fun is too important for that. In particular it seems WRONG that it is the children who are often in the most and the longest, with neuro-disability like me who are the ones who are missing out most! WHY? #WeAllMatter!”

Adam sadly died in March 2015 but his spirit lives on continuing to champion improvement of care experiences for all children, especially those with complex ongoing health care needs.

## The role of nature



Image courtesy of Penny Bayliss Robbins

According to Bird (2007, p.102) 'despite people's feelings towards a healing environment the hospital remains one of our most nature-devoid buildings, with windowless rooms served by strip lighting showing off bright white high-tech machinery. There appears to be a mismatch'.

All the literature reviewed that discussed the role of nature, advocated it's inclusion as a key factor that enhances the experience of children who access health care provision. Although James et al (2007) report that children themselves, do not necessarily think access to outdoor space is important, recent findings suggest children do require easy access to the external environment (Lambert et al 2014) and elements of nature should be reflected throughout the environment. NHS Estates (2004b, p.7) suggest the integration of nature should 'encourage close relationships with nature, including the diurnal, seasonal and weather cycles'. Opportunities to enable this include: gardens, appropriate water features, trees, plants, flowers, the sea, the sky, natural light and fresh air, as well as balconies, terraces, verandas, sun lounges, courtyards and window seats' (NHS Estates 2004b, p.7). Alder Hey in the Park is due to open later this year and planning ensured 'the design embraces the adjacent parkland providing a truly exciting Children's Health Park' (Alder Hey Children's NHS Trust 2012, p.3).

However, when physical access to the natural environment is limited, Coad and Coad (2008) suggest 'bringing the outside in' and this can be done in a variety of ways (Lambert et al 2014).

Enabling the transmission of natural light in patient rooms and providing windows with views of nature (Lambert et al 2014), all contribute to an underlying sense of calm (Alder Hey Children's NHS Foundation Trust 2015a, Norton-Westwood 2012). Representational nature art is the preferred form of art expressed by children across all age ranges and both genders (Eisen et al 2008).

Nature will be the inspiration for art in the 'Alder Hey on the Park', with commissioning influenced by liaison with the Children and Young People's Design Group (Alder Hey Children's NHS Foundation Trust 2015d, 2014b and 2012). Children's preferred design theme relates to the underwater or sea environment, although the focus of how the theme is portrayed changes with age.

For example, 'younger children aged 3–5 years preferred the sea to be almost cartoon-like, focusing on symbols such as a simple boat or a bucket and spade; the children aged 6–10 years viewed the sea as having a beach, fish, seashells, boats, people, creating an almost idyllic holiday scene.'

The young people aged 11 years and above often viewed the sea more conceptually in waves, patterns, quite abstract in design (Coad and Coad 2008, p.40). Once again, thematic design, even of a single theme, needs to reflect the preferences of all potential users of the facilities (Coad and Coad 2008).

## The role of art

The therapeutic benefits of art have been linked with healthcare settings for centuries, going back as far as the Ancient Greeks who used statues and mosaics to aid the healing process (Paintings in Hospitals 2015b).

The use of paintings being installed as part of the 'fabric' of the environment can be traced back to the 14th century (Baron 1995, cited Bishop 2012) and today, art is a central feature of most healthcare environments across the age range (Alder Hey Children's NHS Foundation Trust 2012, Langston et al 2010). As with most aspects of the environment, there has been limited research into the impact of art on patient experience and even less that involves children's perspectives (Bishop 2012, Eisen et al 2008).

Children appreciate 'nice pictures' (Curtis 2007) and artwork is now an integral part of children's healthcare environments (Great Ormond Street Hospital for Children NHS Foundation Trust 2015c, Powell 2015, Alder Hey Children's NHS Foundation Trust 2015d and 2012, Bishop 2012, Bayliss Robbins 2012). Touring exhibitions of art work can be commissioned to enhance the healthcare environment in public areas (Paintings in Hospitals 2015a, Powell 2015, Bishop 2012) while innovative initiatives such as 'Art carts' containing a selection of nature based pictures could be available for children to choose suitable pictures for their hospital room (Eisen et al 2008).

Defining what constitutes art is contentious but within the context of the healthcare environment, art can vary widely from individual pictures by an artist to 'graphic treatments of key surfaces' (Bayliss Robbins 2012) that can span entire areas or departments (Bishop 2012). Bishop (2012) presented the results of a qualitative study that explored the role of art within the healthcare environment and how it's contribution influenced the child and/or young person's satisfaction of the healthcare experience.

Bishop (2012) concluded that:

- 'Idiosyncratic collections' of art that clearly stand out can engage, distract and entertain children, contributing to a positive experience and a feeling of well-being – especially if children's own artwork is included (Bishop 2012)
- Art produced by children was particularly valued, indicating a 'child-friendly organisation' that promoted children's own contribution to the environment itself (Powell 2015, Alder Hey Children's NHS Foundation Trust 2015c, Bishop 2012).

For example, children's drawings have been included as wall tiles as part of the Outpatient's Department at Salisbury Children's Hospital (Patient Experience Network 2013). Children may produce and donate artwork while they are in the healthcare setting, and this is seen as a powerful message of support left behind by one group of children for others (Powell, 2015, Bishop 2012). Children appreciate opportunities to undertake art activities, but these need to be appropriate to the age of the participants (James et al 2007) and this can open up the arts to children who may not have engaged with the arts before (Powell 2015).

Children may also provide art as part of outreach projects, such as Christchurch CE Primary School (2011) who donated paintings by children from Year 6 to decorate Ward 12 at Birmingham Children's Hospital or children from local schools will be producing artwork for hoardings that surround the development area for the new Alder Hey in the Park site (Alder Hey Children's NHS Foundation Trust 2015d).

## The role of art (continued)



However, in research undertaken by Coad and Coad (2008) children's own designs came last as a thematic design for a new children's unit that was being developed.

According to the Eisen et al (2005, cited Society of Radiographers 2015b) children aged 5–17 years of age prefer 'representational nature art over abstract art' and this may be due to a preference for simplicity (Norton-Westwood 2012, Coad and Coad 2008). When reviewing initial feedback within Case Study 2 (Artwork project at Northwick Park Hospital), the only negative comments have been in relation to the 'style' of the artwork, which is abstract in presentation, and this is supported by Lankston et al (2010, p.490) and Bird (2007) who report people who are ill are not always comforted by abstract art. However, for children aged 11 years and over, this is the preferred design, including the use of 'graphic art shapes and graffiti words in the design'(Coad and Coad 2008, p.40).

All reviewed literature clearly identifies the use of cartoon-like images are no longer considered appropriate (College and Society of Radiographers 2015b, Davis, cited Kovacs Silvis 2013a, Norton-Westwood 2012, Coad and Coad 2008, James et al 2007).

Art promotes healing by 'making a space more visually interesting' which enhances the environmental experience for children, families and staff (Powell 2015, Paintings in Hospitals 2105b). This can also include sculptures, live performances such as music or storytelling and utilisation of digital art (Alder Hey Children's NHS Foundation Trust 2015d). Case Study 5 features the work of Go Create at Great Ormond Street Hospital for

Children and demonstrates the diversity of the creative arts that can enhance the experiences of children, as well as offering means of engagement for capturing those experiences.

Norton-Westwood (2012) suggests there is a functional difference between permanent 'graphic treatments' of an entire surface area and the changing exhibitions which enables the environment to constantly change, providing new stimulation (Powell 2015). Workshops can also engage clinical teams and produce specific artwork linked to the clinical area. For example, Artfelt, based at The Children's Hospital Charity in Sheffield, has worked with the Imaging team 'to create fun and exciting artwork by producing scanned popular toys for their very own Toy Story' (Powell 2015).

As part of a Go Create workshop, over 100 children took part in a workshop to paint their own fish, under the guidance of Isobel Manning (Great Ormond Street Hospital for Children NHS Foundation Trust 2015b). These were then featured in the main entrance to the hospital as a feature wall at Great Ormond Street Hospital. The workshops took place across the hospital site and remote participation was also enabled through the use of an online worksheet.

(For more information on Go Create, please see case study 5).

## The role of new technology



Professor the Lord Darzi (2008, p.26), referring to children and young people as part of a review of the NHS wrote 'These generations are influenced by new technologies that provide unprecedented levels of control, personalisation and connection. They expect not just services that are there when they need them, and treat them how they want them to, but that they can influence and shape for themselves.' Hutton (cited Alder Hey Children's NHS Foundation Trust 2015b) who is a former patient and the Chair of the Alder Hey Children and Young People's Forum, endorses this view, stating 'It's what children and teenagers expect these days.'

Today, children are classed as 'digital natives' who are immersed within a world of digital media, so much so, the structure of their brains may have altered from previous generations as a result (van Slyke 2003). Therefore, part of the environmental experience for children includes access to digital media, particularly for communication (Farjou et al 2013, Norton-Westwood 2012, Ekra and Gjengedal 2012, Quan and Joseph 2011) and this is being increasingly facilitated through the use of new technology.

Wireless communication is seen as a significant generic feature of patient satisfaction (Quan and Joseph 2011) although this is often restricted (James et al 2007). This enables children to keep in contact with their peers (Lambert et al 2013, Ekra and Gjengedal 2012) through calls and texting as well as other forms of social media. Norton-Westwood (2012) suggests that unless limitations need to be imposed, for example on a child psychiatric unit, unrestricted use of mobile phones and access to computers should be encouraged, although policies within the setting need to

be in place to ensure technology is used safely and securely (Dinnen and Ware 2014, Lambert et al 2013).

The advent of video calling applications such as Skype and Face Time has enabled children to maintain relationships with their family and friends (Boyd and Bee 2012), particularly when they are unwell. Whether children are being cared for in the hospital or their own home environments, the feeling of 'being included' helps to alleviate feelings of isolation (Lambert et al 2013) that are often associated with chronic long term conditions. For example, playing computer based game with siblings or peers over shared gaming platforms or being part of an online gaming community can promote a level of control and normality that may otherwise not be possible (Tonkin and Etchells 2014, Gibson et al 2010).

NHS England (2014) advocates the use of technology to capture feedback, using creative and innovative methods. Technology is at the forefront of the new Alder Hey Children's Hospital, and new innovations include using a robot to collect feedback from children and young people, providing a 'fun and exciting way' to engage with patients (Alder Hey Children's NHS Trust 2015b).

There are also plans to enable children to create their own avatar before they enter the hospital which can then be used as part of the new 'Patient Entertainment and Technology System' (Alder Hey Children's NHS Foundation Trust 2015b).

Children want access to 'technological entertainment' and this can be stationary or portable (Lambert et al 2013).

A robot being used to collect patient feedback.  
Image courtesy of Alder Hey Children's NHS Foundation Trust.

## The role of new technology (continued)



For example, when asked about the environment, 58% of teenage patients with cancer who were surveyed by Farjou et al (2013) suggested big screen TV's, gaming consoles, laptops and computers should be available, all of which can offer a variety of video games. iPods and tablets can facilitate the gaming platforms, viewing of photographs and listening to music (Lambert et al 2013). These are also now increasingly being used to provide distraction within the clinical environment (Dinnen and Ware 2014).

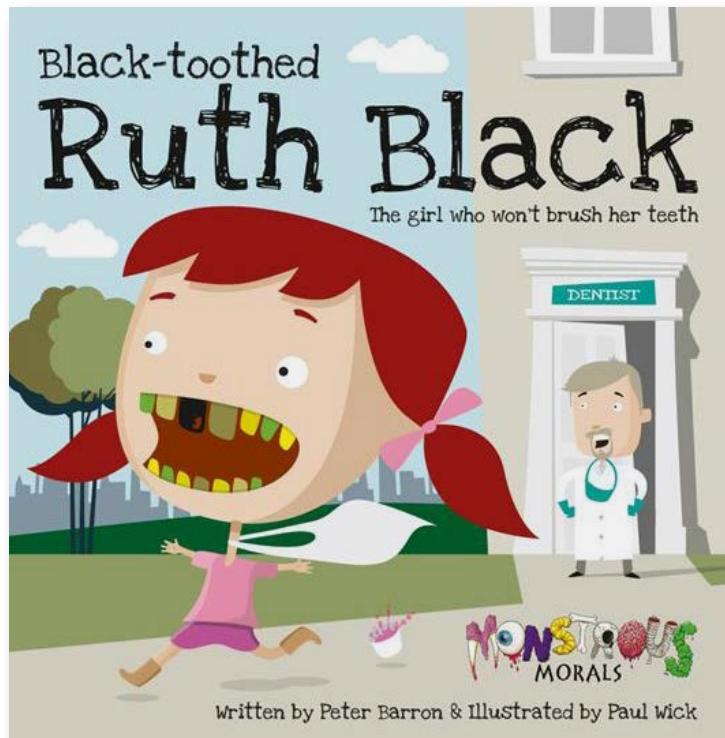
New technology is also being used to change the clinical environment during treatment on a larger scale. Alder Hey Children's NHS Foundation Trust (2014) have installed an 'immersive projection system' in the hospital's ECHO rooms for cardiac patients. With 50 different changing scenes to personalise the experience, the system will 'allow images to be projected onto the walls around a patient. The system also features surround sound and LED lighting to immerse each patient in a different engaging setting and put them at ease during their assessments and procedures'.

Another example comes from The Great North Children's Hospital who have just purchased a revolutionary 3D Vpod which is a 'pain-distraction unit' that can be used to 'reduce stress and encourage relaxation (Thompson 2015). With money raised through The Children's Foundation, the new technology requires users to wear 3D glasses, which in itself, creates an opportunity for communication, which is especially useful for dealing with anxious parents.

The use of projection technology is particularly useful for manipulating environments that cannot be physically or creatively altered (Lambert et al 2014). For example, Mathers et al (2011) reported the use of projectors and lights within x-ray rooms in a total of five departments out of a total of nearly 300 respondents.

One final example of the power of digital technology to transform the healthcare environment through social connectivity comes from THE Christmas party of 2014 – #AdsPartywhich was a Tweetmeet conducted through Twitter (Webster 2014) . The party was organised on behalf of Adam Bojelian (2014a) and was designed to 'bring together Adam and his family together with all of the people he inspires through social media, throw in a bit of food and celebrate Christmas'. As Webster (2014) comments 'The assembled crowd look on, connected in the moment'.

## Oral health – going to the dentist



The traditional role of the hospital as a focal point of health care delivery is changing (European Healthcare Design 2015) and the promotion of health service provision within local communities is becoming increasingly important (Department of Health 2013e) with integrated health care services being established closer to home (Royal College of Nursing 2014). Dental health services provide an established example of localised community health care and offer useful lessons about children and their engagement within a healthcare environment.

Going to the dentist provides children with early opportunities for interacting with healthcare service environments. Children are not naturally afraid of the dentist so enabling children to have a positive experience should lay the foundations for a 'lifetime free from fear of regular dental visits (Crystal 2014). Parents are encouraged to take their children to the dentist when the child's first milk teeth appear in an effort to familiarise them with the environment and the dentist (NHS Choices 2013a).

Children's early exposure to routine dental appointments are seen as crucial for developing a positive attitude towards future visits and parents are advised to make these visits positive and fun (NHS Choices 2013a). Preparation should involve introducing children through focussed discussion, which can include tailored books, featuring fictional characters that children already know (Crystal 2014), such as Going to the Dentist: first experiences with Biff, Chip and Kipper (Hunt and Brychta 2014) or Peppa Pig: Dentist Trip (E1 Entertainment 2013).

For older children, raising children's awareness of the consequences of bad habits through books such as Black-toothed Ruth Black (Barron 2013) provide an alternative approach to promoting effective dental health practices.

This is increasingly necessary as in today's society, dental caries is the most common disease affecting children (Boye et al 2011) and is a major area of concern for the government in relation to children's health. In the first national dental survey of three year olds in England, 88% of children had no decay and this is encouraging (Public Health England 2014). However for the 12% of children who do have tooth decay, this can be very painful and will require treatment. This concern is highlighted through the proposed inclusion of an additional area for improvement within the NHS Outcomes Framework that will eventually have an indicator to work against (Department of Health 2014).

According to Kay (cited NICE 2014) 'around 25,000 young children are admitted to hospital each year to have teeth taken out'. Invasive dental procedures for those under 10 years of age are considered to be a 'never event' and are seen as a failure of primary care, and a cause of 'avoidable harm' to children which is preventable (Department of Health 2014).

Children identify that attention to the dental examination environment can enhance their experience and influences the acceptability of the care being offered (Boye et al 2011).

## Oral health – going to the dentist (continued)



Welly et al (2012) explored children's readiness to cooperate with the dentist. In an evaluative study involving 88 children aged 3-18 years of age (average age 8.3 years), a questionnaire was used to evaluate features of the dental experience and how it linked to cooperation on the part of the child. The age of the child did not show any influence on how the items relating to the dental atmosphere were answered.

Their work identified that uncooperative children were significantly more afraid of the dental environment and that 'children's non-cooperative behaviour results often from their aroused interest in the unknown environment, which causes an unpleasant perception of the whole setting' (Welly et al 2012, p.195).

However, it was also noted that: 'A relaxed atmosphere with available reading in the waiting room, the dentist's colourful clothing, and pictures on the wall of the treatment room are not so essential for successful treatment as certain characteristics of the dentist' (Welly et al 2012, p.201). It would appear that the characteristics of the dentist are the most significant feature for a child and simple things such as a friendly greeting when the child enters the treatment room contributes much to the overall experience (Panda et al 2014, Welly et al 2012, Boye et al 2011).

Festini et al (2008) explored children's perception of nursing attire and although children and parents preferred the colourful alternative uniforms being worn, it did not alter their perception of the hospital environment. Welley et al (2012) also explored the role of colour for clothing worn by the dentist and identified that children who were uncooperative do not want to see dentists in colourful clothing.

Panda et al (2014) identified that most children, when asked, prefer dentists to dress in traditional white attire, no jewellery and shoes that have closed toes. They also preferred dentists to 'smell nice'. It may be that children are not able to assimilate and accommodate a challenge to their pre-existing schema 'of a dentist' and therefore a change in image may be overwhelming. Similarly, Hellar-Euler-Rolle (2006, cited Welley et al 2012) suggest children associate the colour white with professional expertise and deviation from this image challenges the child's perception in terms of the dentist's ability to 'diagnose and treat'.

The widespread incidence of poor dental health means prevention should be 'everyone's business' and settings such as schools and nurseries should be involved in the promotion of oral health, through the provision of support and guidance on oral hygiene (NICE 2014). This exemplifies the move towards integrated care within the community. If this is to be effective, using dentistry as an example, children express the need for 'conducive environments with more explanatory and effective communication' (Boye et al 2011).

## The home as a healthcare environment



Murphy (2008, p.16) states that 'children have a right to be cared for in an environment that is most suited to their needs' which reflects article 3 from the UNCRC whereby organisations need to work towards what is in the best interests of the child (Unicef 2008). The 'drive' for children to be nursed at home is reflected through international policy and global trends (Royal College of Nursing 2014, Murphy 2008).

Standard 8 from the National Service Framework for children, young people and maternity services (Department of Health and Department of Skills and Education 2004) specifically deals with children who have a disability or complex health needs and advocated the role of 'high-quality child and family centred services which... enable them and their families to lead ordinary lives' (Murphy 2008, p.14).

The best way in which this can be achieved is to provide care within the community and this is being promoted as the preferred means of providing care for the majority of longer term and mild to moderate conditions and assists normality by enabling routines to be followed in a familiar environment with families and friends close to hand (Department of Health 2013a, Department of Health 2011).

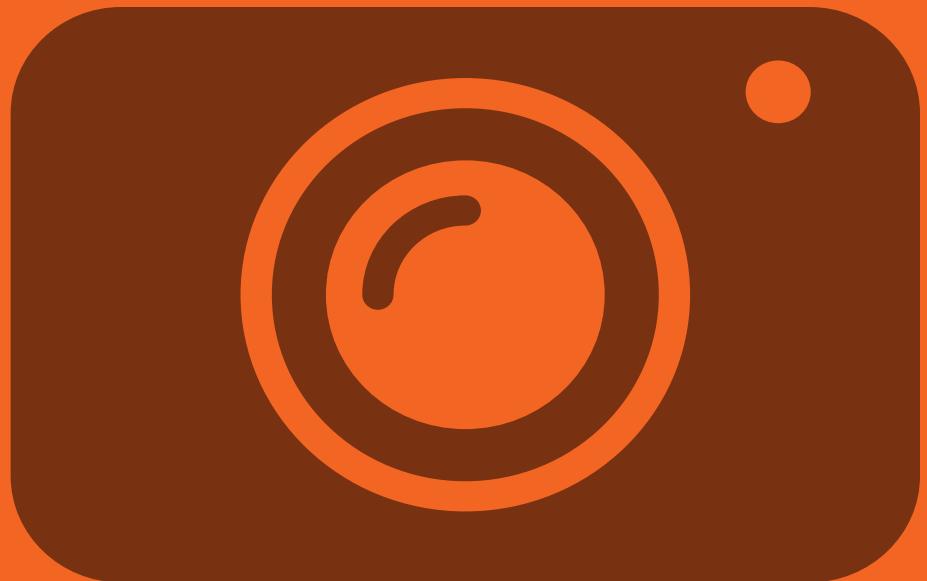
This requires working in partnership with the child and their families, which can allow the family to be more in control and enable knowledge relating to the medical needs of the child to be acquired more quickly (Department of Health, 2011). Taylor (2008, cited Murphy 2008) identifies a number of difficulties transferring care from high cost hospital services to primary care, but none of these reflected the change in environment.

The home as a healthcare setting provides its own unique challenges as the functionality of a clinical setting needs to be achieved whilst appreciating the environment is the domain of the family who live within it. Sitzman and Leiss (2009) reviewed the experiences of 833 home and hospice healthcare practitioners in North Carolina. They noted that 33-50% regularly visited homes which had 'unrestrained pets, clutter or poor lighting' and 80% reported sometimes visiting homes with 'uncontrolled children', which could 'affect work-related safety, efficiency and job satisfaction' (Sitzman and Leiss 2009, p.520).

On a more positive note, the role of charities can be crucial. Play is still an essential part of healthcare provision and opportunities for children and their siblings to engage with play based activities within the context of the home environment are important (Warren, Gilkes and Kirby, cited Tonkin 2014). For example, Noah's Ark Children's Hospice (2014) is based in the community and provides emotional support and practical care assistance for the 'whole family'. The team includes family link workers, nurse-led specialist carers, play specialists, family support volunteers and the family themselves.

Support for siblings is particularly valuable and opportunities to meet other children who are in a similar situation, and have fun provides a valuable extension to the environment of health care (Noah's Ark Children's Hospice 2014).

# Capturing experiences and moving forward



Case study 3 – Turning the ‘brief’ into reality	108
Case study 4 – Brief Making and the Participatory Process	127
Case study 5 – GO Create! Capturing children’s voices through art	136
Evidence based design – but from whose perspective?	160
Research based techniques for eliciting children’s preferences and experiences	161
Engaging children and young people in the evaluation of healthcare environments	162
Recent projects that have incorporated children’s views	163
The Friends and Family Test	165
Capturing the voices of young children	166
It is the simple things that make the a big difference	167
The role of philanthropy – back to where we started	168

Case study 3:

## Turning the ‘brief’ into reality

Jo Trussler | Health Care Planner  
Great Ormond Street Hospital NHS Foundation Trust



**Walrus  
Character Poses**



Case study 3:  
**The concept**

- The hospital were aware that visitors and patients had difficulty finding their way around
- This situation would become more challenging with the addition of new buildings to the estate in 2012 and beyond.
- Very different responses from children and young people in the hospital to the way different wards had been themed – some good and some bad – during ‘Listening Events’.
- Needed an over arching strategy for way finding and naming of wards
- In 2008 Landor – the global branding agency – created a strategy for way finding at GOSH

Case study 3:

## The original ‘brief’

**The brief to Landor was to address these challenges in a way that provides for:**

- **age range at GOSH newborn to 18 years**
- **key identification elements of the system (ward signs and icons)**
- **wards that are not age specific**
- **a clear navigational system that reinforces way finding**
- **a theme and**
- **graphics children, young people and families could engage with;**
  - provide distraction
  - be educational
  - fun
  - high quality artwork
  - appeal to our children, families and staff from culturally diverse backgrounds.
  - reflect the principles of the building and hospital, ‘the child first and always’; world class, pioneering, environmental, welcoming
  - complement (but not conflict with) the hospital’s surrounding interiors

Case study 3:  
**The original ‘brief’**  
(continued)

- To implement the ward identities into Morgan Stanley Clinical Building
  - commissioned graphics firm ‘Smith’
  - their brief was to follow the original concept/brief given to Landor
  - develop the graphics from the ‘concept’ to reality
  - pilot in a newly refurbished and renamed ward – Squirrel



Case study 3:

## **Input from children and young people Way Finding, Ward Identities and Colour**

- Important to engage with children, young people and families
- Needed to understand what was important to them; colours used in graphics needed to be reflected in ward environment
- Variety of methods used:
  - Road show
  - Visiting wards
  - School
  - On line group

Case study 3:  
**Roadshow**

- Used main entrance of hospital – large ‘footfall’ through area, waiting area for transport, between appointments
- Held over 1 week (Monday to Friday, AM and PM)
- Used boards showing graphics, questionnaires, ‘bricks’ and letter boxes (for pre school children; posted a coloured brick into a letterbox if they liked the graphics)
- Approached families waiting, passing through, those that stopped to look and asked if they would give feedback
- Explained to families why we were doing this
- Captured general comments about way finding as well

Case study 3:  
**Workshop**

---

- **Workshop for staff**
- **Presented concept**
- **Feedback session – general discussion, capturing comments, questionnaires**

Case study 3:  
**Visiting the wards**

- Visited wards moving into Morgan Stanley Clinical Building
- Permission to approach children, young people and families from ward staff
- All age groups
- Included parents with their child\*
- Used colour boards from architects
- Used graphics from Landor
- Subsequent visits to wards using Smith graphics

\*Child defined as between new-born to 18 years

Case study 3:  
**Visiting the wards (continued)**

### **Introduction**

A small scale project, in collaboration with the lead play specialist, to consult Children and Young People and their parents on the proposed colours and animal graphics for wards in the Morgan Stanley Clinical Building took place during February and March 2010.

In particular, we wanted to know whether the colours and animals appealed to them or not.

To assist the project, colour boards with the animal graphics and colour samples for each ward were used and shown to inpatient children and young people on those wards who will be transferring into MSCB in May 2012.

Additionally, Cardiac Intensive Care Unit [CICU] staff were shown the colours and animal graphics for their new unit; the nature of intensive care meant that we did not have access to children and young people who could participate and the range of colour to be used is limited because the unit is largely open plan.

**Flamingo – Level 4 CICU**

**Koala – Level 5 Neurosciences [Tiger/Parrot]**

**Bear – Level 6 Cardiac Inpatients [Ladybird]**

**Eagle – Level 7 Nephrology [Victoria]**

A summary of their comments is shown in Table 1.

\*Child defined as between new-born to 18 years

Case study 3:  
**Visiting the wards (continued)**

**Table 1**  
Summary of Comments

	<b>Flamingo</b>	<b>Koala</b>		<b>Bear</b>		<b>Eagle</b>	
	Staff	Parents	Child/Young person	Parents	Child/Young person	Parents	Child/Young person
<b>Bedroom colours</b>	IPS panels only shown. Felt the pink was fine and would highlight the hand wash basins well.	Liked colours; bright & fresh, homely	Green is favourite colour. Liked both colours; bright and cheerful	Liked the colours.	Liked the green and yellow – yellow a bright, happy, fun colour	Liked the colours.	Liked the colours.
<b>Reception/Admin base/Clinical Support Station</b>	Liked the colours	Liked the colours; makes them noticeable	Liked the colours; bright and welcoming	Liked the colours; fresh and bright.	Liked the sparkly black colour.	Liked the colours very much	Liked the colours very much
<b>The animal</b>	Liked the flamingo not sure they would always use the name on the unit, but for parents and children it gives an identity to the unit especially with way finding.	Liked the koala but wouldn't want it to be everywhere. Liked the theme, animal and the colour scheme.	Liked the koala. Koala favourite animal. Friendly and cuddly. Liked the 'facts about the Koala. Would like to see a tree with a koala sitting in it. Liked all of it.	Really liked the bear.	Loved the bear especially his nose. Loved the bear.		Liked the eagle; it needs to be realistic but could it be made to look less 'hard'? Could the image be used as 'stick ons' for bathroom tiles?
<b>Overall opinion</b>	Liked	Liked all of it		Liked all of it; no negative comments		Liked all of it.	

Case study 3:  
**Play Specialist**

- Play specialists allowed access into Activity Centre
- They were able to participate during the sessions
- Age range toddler upwards
- Relaxed, fun environment
- Parents also present
- Play specialists also facilitated scout group and Radio Lollipop taking boards to wards and getting feedback during evenings and weekends

Case study 3:  
**Hospital school**

- Hospital school approached
- Age range from 5 upwards
- Teaching staff used the boards in a lesson about the graphics and way finding

Case study 3:  
**Parental input**

- Parental input present throughout
- Children and young people usually have a parent staying with them
- Important to ‘go through’ the parent to talk to the child
- Parents also have an interest in the hospital environment
- Finding their way round is very important to them; coming to hospital is stressful and can be made more so if you can’t find the ward/department you want

Case study 3:  
**Members Forum**

- **Members Forum established prior to becoming a Foundation Trust**
- **Important to engage with them and gain feedback; they are actively involved with the ‘business’ of the Trust**
- **Feedback collated together with all other comments**

Case study 3:

## The outcome from the consultation process

- Outcome of consultation = recommendations being made/report
- Recommendations accepted
- Budget identified for pilot on Squirrel Ward
- Lessons learnt regarding design process and installation informed the next stage
- Budget identified as part of Phase 2A Morgan Stanley Clinical Building
- Smith commissioned to take work forward

Case study 3:  
**Themes used in the wards**



1.



2.



3.



4.

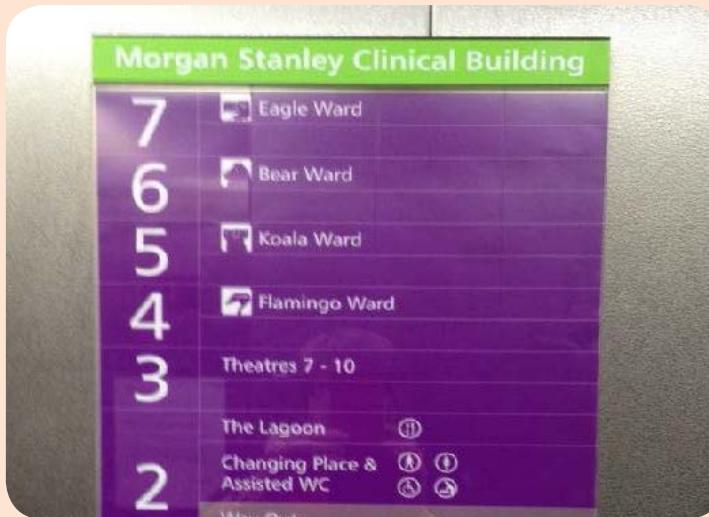
1. L4 Living in Rivers and Lakes – Flamingo. (Intensive Care Unit)
2. L5 Living in the Trees – Koala Inside the ward. (Reception)
3. L6 Living in Hills and Mountains – Bear. (Opposite bedrooms)
4. L7 Living in the Sky – Eagle. (Opposite bedrooms)

## Case study 3: Signage for way finding

1. Lift Signage

2. 'You are Here' boards with colours of each building

3. Signage showing colour related to building name, animal icons and floor you are on (white with purple writing).



1.



3.



2.



3.

## Case study 3: Corridors

1. Engage – ‘did you know?’
2. Orientate
3. Patient journey to theatre



1.

1.



2.



3.

Case study 3:  
**The future**

- Learning from the process for Phase 2A
- Informs future phases but also has enabled a gradual ‘roll out’ to other areas as they are refurbished
- Wards/departments actively ask about changing name/having graphics commissioned
- No central budget – each area (other than future phases 2B, 3 and 4) have to fund graphics themselves



Case study 4:

# Brief Making and the Participatory Process

Lucy Dinnen | Architect

**How to involve the users and their voices in the design of healthcare spaces for children and young people.**



Image of urban masterplan consultation with children and young people.  
Courtesy of Hawkins\Brown Architects LLP

Case study 4:  
**The rationale**



“

Hospital design doctrines have come and gone, but experience has told us what works and what doesn't, and taught us the value of including every kind of user – specialists, nursing staff, patients and public – in the planning and designing of healthcare facilities from the outset.” (p.13).

Royal Institute of British Architects (2011)  
Good design – it all adds up. London: RIBA.

Image of Urban masterplan consultation with children and young people.  
Courtesy of Hawkins\Brown Architects LLP

Case study 4:

## Consultation vs. Briefing

- Briefing is the process undertaken with the client/funder and users to ascertain their aspirations for the building and what they need it to do. This ranges from the more academic – space planning, to the more ambitious – aspirations and values.
- Consultation is the broader discussion around the building and its planning with a wide variety of stakeholders. This can range from: Local Planning authorities, community groups, conservation societies and youth groups, amongst others. Consultation will often involve models and presentations which can communicate a scheme to many different people at a high level.
- It is important to ensure that briefing involves all building users and not just staff. Whilst traditionally children and young people may not have been included in the briefing, they might have been a stakeholder in consultation, successful spaces for children and young people will involve them in the brief making and all stages of the design process in an active way.

Case study 4:

## Engaging children and young people

- Good practice involves engaging with all the users of a space from the outset using a variety of tools to enable discussions and record users needs in a quantitative way and their aspirations in a qualitative way
- A number of methods exist and should be used, promoted and developed for engaging children and young people
- Examples include:
  - Game playing
  - Workshops and design charrettes with children and young people
  - Getting children and young people to draw and design their own spaces
  - Visiting other similar spaces and benchmarking using a set of evaluation criteria
  - Using models of a scheme to allow C&YP the opportunity to play around with the elements and understand the possibilities and options
- In all cases, this requires a safe and positive environment to discuss in groups what children and young people like and dislike about existing spaces

Case study 4:

## A truly participatory design process

- The key to engaging children and young people in the design of spaces they will use in any environment, is to realise the importance of such engagement and ensure time is given for this in the programming of the project.
- Many factors influence the short design programmes of projects but it is a key role of the architects and designers to ensure time is given for adequate and continued consultation with children and young people.



Image; Most Mira Youth Centre Consultation Workshop.  
Courtesy of Verne Causevic (CV Architecture)

Case study 4:

## A learning experience for all involved?

- Consultation with C&YP has to be part of the project in it's entirety from the earliest brief-making, to the final finishes, colours and specifications, each time ensuring that those who have taken part can see how their suggestions and comments have been listened too and incorporated where possible.
- A truly collaborative and positive design process is not about a single consultation half-way through a project, but about a continued shared dialogue ensuring all stakeholders feel part of the process and a valued member of the team
- Ensure consultations are recorded and analysed and shared with the participants

## Case study 4: Good practice and advice



Program in a series of regular consultations from the outset to completion with the C&YP at all key design stages, making sure each one acknowledges and addresses the comments from the previous and builds on it - offering different approaches. For example:

- Open creative drawing and ideas workshop- ‘Generating the Brief’
- Game playing and modeling workshop - Massing and outline design stage
- Materials selection- discussions on the look and feel of spaces
- Site visits during construction

Keep the children and young people involved consistent, ensuring everyone is invited back each time and new children and young people can join along the way.

Case study 4:

## Consultation technique case study: Most Mira Youth Centre, Kevljani, Bosnia and Herzegovina



Although this case study covers a project for a Youth Centre outside of the UK, the applied techniques and skills are generic and can be equally applied when engaging children and young people in healthcare specific projects.

### The project

The development of a multi-faith Youth Centre for post-conflict resolution through performing arts by a British-Bosnia charity Most Mira (Bridge of Peace).

Architect: Vernes Causevic of CV Architecture.

The project, though still in the planning stages, has undergone a number of successful consultation and briefing events with children and young people and has future events lined up.

Case study 4:

## Examples of successful consultation and engagement techniques on this project

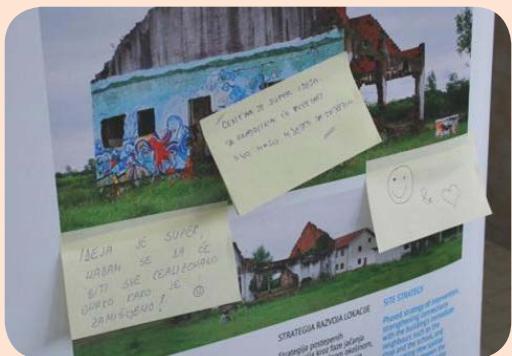


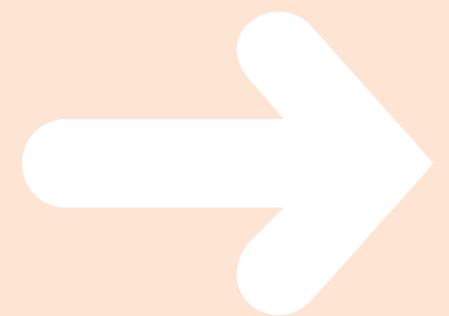
Image courtesy of Vernes Causevic (CV Architecture)

- Large scale presentations
- All day workshops with children and young people
- Using models of the existing site and options at different scales which can be pulled apart and reconfigured to explore spatial options with the children and young people
- Postcards drawn with outlines of the site which ask the children and young people to draw on their ideas for what it should be. Each postcard is addressed ready to send back so some are filled out on the day but people have the opportunity to take it away and think more and send it back later too
- Painting colourful wooden blocks to help open up the environment and get everyone physically being creative on the day. The blocks will form part of a later exhibition
- Creating a safe and positive environment for the children and young people to discuss their ideas and talk openly and free from judgment

Case study 5:

# GO Create! Capturing children's voices through art

Isobel Manning | Interim Head of the GO Create! Arts Programme



Case study 5:

## 'GO Create!' – the aim



The GO Create! Art Programme at Great Ormond Street Hospital (GOSH) is an innovative, collaborative and specialist service that makes a vital contribution to the healing environment and enriches the hospital experience for patients, families and staff.

Through curated participatory activities, performances, residencies and art commissions GO Create! aims to provide engaging opportunities across a wide variety of art forms: from music, theatre, dance and visual arts to digital media and design.

We offer unique opportunities that reflect the diversity of GOSH patients, visitors and staff and work with high profile cultural partners to inspire creativity and learning across Great Ormond Street Hospital.

Although we do not offer art therapy, we aim to provide arts experiences that enable patients and families to express, process and understand their response to being in hospital in ways that they cannot otherwise articulate.

Case study 5:

## The benefits of art and creative activity in healthcare settings

- Induce positive physiological and psychological changes in clinical outcomes
- Reduce drug consumption
- Shorten length of stay
- Increase job satisfaction amongst staff
- Promote better doctor-patient relationships
- Develop health practitioners' empathy
- Assists in humanising the hospital environment
- Introduces welcome distractions for anxious patients and carers, making it easier for staff to perform procedures
- Provides a sense of calm that can make an institutional building feel more 'like home'
- Can assist with way finding
- Provides links with the local community and fosters a sense of civic pride
- Engages public interest and participation during design development and throughout the lifetime of the building.

Case study 5:

## Working in partnership



**GO Create!** has worked with a wide range of prestigious cultural partners to deliver bespoke projects with patients, families and staff.

These projects are exhibited in the hospital, as well as external galleries and public exhibition spaces.

Affiliated organisations include:

The Foundling Museum, V&A Museum, London Transport Museum, English National Opera, Rambert Ballet Company, The Royal Ballet, National Portrait Gallery, British Museum, The House of Illustration, OPUS Music, The British Library, Tagore Centre, The Place, The Wellcome Trust and Southbank Centre.

Case study 5:  
**We provide...**



### **Interactive Workshops**

Fortnightly participatory workshops with visiting artists and cultural partners, such as galleries and museums, deliver a range of hands on arts activities in the wards and run group workshops in outpatient areas, on average working with 50 patients per session.

### **Performances and Events**

Fortnightly music performances touring wards and public spaces, plus specific performances and events. We work with a range of musicians from the classical western tradition to diverse and new instruments from around the world. This year we have commissioned a piece of mobile dance theatre that has been specially designed for the hospital environment and to reach children unable to leave their rooms/wards. Visiting musicians/dancers perform and engage with patients on the wards, offering children opportunities to participate. They also perform to larger audiences in outpatient areas. On average they engage with 100 patients per session.

Case study 5:

## We provide... (continued)



### Creative Residency Programme

Annual in-depth project/s where an artist/s or arts organisation is embedded within a department or ward to work creatively with patients and staff over a set period of time.

### Temporary Exhibitions

Exhibitions in a variety of 'pop up', temporary spaces and online galleries as well as more established GOSH gallery spaces. We showcase a range of children's, staff and artists works.

### Staff Culture Club

Bespoke opportunities for staff to take part in wider cultural events and learning, such as museum and gallery visits, music and performances and creative workshops. There are 177 members of the group and we aim to make all events free. Culture Club gives staff the chance to balance their work life with a wide range of engaging activities. Events help to relieve work-related stress and provide a social occasion in which to meet staff from other working groups.

Case study 5:

## We provide... (continued)



### Research

Collaboration with internal GOSH research centres and use of our expertise in patient engagement to build effective communication and interaction with young audiences for research purposes. We develop creative approaches that help patients overcome clinical challenges, increase knowledge of procedures and conditions and build confidence and resilience.

### GO Create! Digital

Online creative learning resources are downloadable from the GO Create! web pages enabling wide-spread impact of the programme. Digital participatory workshops developed with cultural partners to inspire creative use of digital technology. GO Create! are currently developing an app in collaboration with the Centre for Nursing and Allied Health Research to help relieve patient anxiety associated with blood tests as well as a digital art trail that will help with hospital way-finding.

## Case study 5:

### Extending our reach through digital technology



Children and young people are one of the biggest user groups of mobile technology, with many digital applications known to have a positive impact on their development in education and health. GO Create! use the digital medium to create innovative ‘tools’ for communication and procedure preparation and provide interactive and creative experiences that engage young audiences with technology.

Offering digital opportunities as part of the GO Create! arts programme can expand our reach, promote creativity, enhance wellbeing and offer distraction in a way that is easily accessible for our population.

GO Create! are working in collaboration with the Centre for Outcomes and Experience Research into Children’s Health, Illness and Disability (ORCHID) at GOSH to create an I-Pad Application called Blood Quest. This App offers a variety of opportunities for learning, interaction and participation that can be used either at home or in hospital. It uses interactive visuals, animation to explore facts about the blood and the circulatory system that children age 7-11 can engage with prior to having their blood taken.

A key feature of the App is a game, with levels and play that will be familiar to young people. The game is designed to be used by children during a blood test procedure.

The App will be free and available for children and families to download from the GOSH website. GO Create! Have also been working with the digital programmes team at the V&A museum to run sessions where children can create their own computer games or digital animations and learn computer coding and programming.

Case study 5:

## Art Commissions

“

We work with artists who are able to collaborate with children and young people in the development artworks, allowing patients to take ownership of their surroundings.”

Art commissions help to create a welcoming, relaxed, interesting and interactive environment for visitors. In clinical settings, artworks can distract and relax patients so that procedures go more smoothly. Where possible, we work with artists who are able to collaborate with children and young people in the development artworks, allowing patients to take ownership of their surroundings. The artworks commissioned by GO Create! benefit all GOSH visitors and appeal to both children and adults.

GO Create! leads on all art commissioning for new buildings as part of the GOSH Redevelopment programme. Working as part of this team GO Create! help make the hospital environment more personal – by involving patients in the development of artwork, providing design elements and innovative creative tools that engage them and by developing amazing spaces that inspire their imagination or make the clinical environment feel more like home.

Case study 5:  
**Art Commissions (continued)**



Case study 5:  
**Arts Award**



In 2014 GO Create! became an Arts Award Centre and made it possible for 13 play staff, school staff and volunteers to qualify as Arts Award Advisers delivering the scheme to patients across the Trust.

Arts Award is a nationally accredited qualification that recognises creative talent. At its highest level an award is worth 35 UCAS points. The flexibility of the award means that it can be achieved by children and young people outside of school sessions and can be adapted to meet the needs and interests of individual patients, particularly those who find it difficult to attend regular school sessions. We aim to develop and grow this programme.

Case study 5:  
**Creative residency**

“

**Staff help to give deeper insight and the artists will work with children and young people for an extended period of time to produce some kind of creative output.”**

An artist or arts organisation works in an embedded way with a specific ward or department. A project will be developed collaboratively with staff and the artist on the basis of that particular artist's practice and how it can relate to the needs and experiences of the children and young people on that specific ward. Staff help to give deeper insight and the artists will work with children and young people for an extended period of time to produce some kind of creative output. In the past this has been a book, a film, permanent artworks for the ward, or a public performance.

This year GO Create! are running two residencies...

At the end March 2015, GO Create! will be working with the internationally acclaimed Rambert Ballet Company, who have developed research projects in other hospital settings. They will be working with the Physiotherapy department to use creative and expressive dance and movement to improve the physical health of patients. Children and young people will work towards a choreographed performance that will help to raise aspirations and see physical activity as a means of expression, social interaction and enjoyment as well as a necessary means to recovery.

Case study 5:  
**Creative residency –  
The Tagore Centre**



The Tagore Centre is a cultural organisation that promotes and celebrates the work of Nobel prize-winner Rabindranath Tagore. Tagore was a prolific Bengali writer, philosopher, artist and outstanding thinker of the 20th Century, though he is relatively unknown in this country.

In January 2015, artist and storyteller Ansuman Biswas worked with children and young people on ICI Division wards on behalf of the Tagore Centre. He helped patients explore Tagore's esteemed play 'The Post Office' which is about a young boy called Amal who is unwell and in bed.

Amal spends his time looking out of the window and dreaming of the wide world beyond his room. Enchanting characters come to look after Amal: give him advice or just pass by his window. The story is touching, uplifting and sensitively addresses the experiences of a child who is unwell.

Case study 5:

## Creative residency – The Tagore Centre (continued)



Most of the patients involved in the residency were themselves being nursed in strict isolation. On Fox and Robin wards children waiting for Bone Marrow transplants can spend between six to ten weeks in their rooms.

Using painting, drawing and poetry this opportunity enabled patients to express their own experiences. They quickly connected to the character of Amal and the story sparked thoughtful and imaginative responses.

Mameet age 7 painted the stars he could see from his window at night and Keanu age 9 imagined a meadow of flowers. The residency will be remembered with a published collection of letters and postcards depicting the children's work.

66

**It made me feel well and forget my pain... I loved it.”**

Maya, age 7 – Lion ward

Case study 5:

## Using the arts as a participatory method of engagement



The arts can speak to our children and young people in ways that other forms of communication cannot. Music, visual arts, dance, storytelling and digital activities are all outlets that may help children to articulate their ideas and experiences.

Case study 5:

## Art within healthcare

“

**Children become more self-assured and resilient when faced with challenging circumstances and better able to understand and communicate their feelings.”**

Art helps children recognise and value their own unique abilities, it also enables them to identify the individual qualities in others. As a result of this enhanced knowledge and understanding of their own and others capabilities, children become more self-assured and resilient when faced with challenging circumstances and better able to understand and communicate their feelings.

In a clinical environment, children can feel isolated, helpless and insecure. Art counters vulnerability, increases confidence, improves communication and helps children in hospitals to develop social and emotional coping mechanisms. Rather than seeing the world as good or bad, black or white, art can show children a middle ground that helps them cope with situations beyond their control.

Art can also increase understanding between clinicians or nursing staff and the people for whom they care. In offering our children and young people a range of meaningful activity in which to discern and express their expert views and unique experiences GOSH can deliver more individualised care and patient-focused services.

Case study 5:  
**Inspiring and unique**



**GO Create! inspire hope, speed recovery, give children and young people a sense of control, help them manage their anxiety and expand their sense of the possible.**

**Research shows that arts programmes have an effect on shortening length of stay, reduction in drug consumption, increasing throughput in diagnostics such as blood tests and MRI scans, inducing positive physiological and psychological changes in clinical outcomes, increasing job satisfaction amongst staff, promoting better doctor-patient relationships and developing health practitioners' empathy.**

**Our work not only brings delight and pleasure to those involved, but is an inspiration and example to many other hospitals and healthcare institutions across the globe.**

Case study 5:  
**Participatory workshops**



**GO Create!** recognise that different art-forms affect the health and well-being of our patients in different ways and we carefully plan our projects to suit the needs of the wards and departments involved. We use a diverse range of specialist creative techniques and also offer artist-designed worksheets and online resources for patients and families to use outside of our regular sessions.

The participatory stream of our programme is based primarily in clinical areas – including at the bedside – which puts us at the heart of hospital life and offers us an opportunity to have an immediate impact on patient experience and outcomes.

Case study 5:

## 'One approach does not fit all'



We employ a wide range of art forms to capture the voice of our children. Some of the experiences we provide are completely new for some children and young people, others are familiar and comforting. It is important to provide a balance and to offer familiar practices as well as to inspire and challenge preconceived notions of what art can be further promoting learning and development.

75% of GOSH patients are under the age of five. We find that music and dance are easier for younger patients to respond to than the more practical arts and craft sessions, although patients between the ages of 2-11 years of age are generally interested in participating in a range of activity.

Running drop-in sessions for all children can mean that older children are less willing to engage when they see younger children doing a particular activity.

Case study 5:

## Using art as an alternative to surveys and questionnaires

Surveys and questionnaires tend to be completed by adults... this will be particularly so as 75% of our patients are aged five years or under.

By articulating concepts and ideas about new buildings, sustainability and the hospital experiences through creative workshops and activity, we are able to:

- a) Communicate better with our audience
- b) Provide children and young people with tools that they are able to use to communicate their opinion back to us

We have provided illustrations of potential rooms and spaces in the hospital that children have then been able to customise to show how they would like the hospital to look and feel.

We ask children to provide feedback to creative sessions by circling one of three faces which express positive, 'in between' and negative emotions.

In developing a recent patient experience measure for patients with cancer we used illustrations of positive and less positive situations that the children may have experienced in the hospital to help them identify and differentiate against their own experiences. Visual representations of emotions and situations are tools that connect young children with their felt experiences.

Case study 5:

## We currently measure impact in the following ways

- Participant numbers
- Feedback and evaluation from patients, families and staff, including child friendly methods
- Profile within the organisation, our wider stakeholders and the public
- Feedback from our Twitter account @GoCreateGOSH: number of followers, 're-tweets' and 'likes'
- Numbers of children achieving Arts Award
- Evidence from our work with clinical research centres

We document the majority of activities through a combination of written responses, informal discussion and photography. We will assess the benefits of investment on two levels, both the process of engagement and the outcome. All projects aim to engage participants in a quality creative experience while simultaneously contributing positively to the hospital experience.

Case study 5:

## Promoting a ‘sense of belonging’



### Example: Photographing Change

Over the past year GO Create! have been hosting a series of Photographers in Residence to help us document the significant changes to patient and staff environments at GOSH.

In February and March 2014, children and young people became the photographers, capturing images of Cardiac Wing (Badger Ward and Dinosaur) prior to its demolition. The Premier Inn Clinical Building, (Phase 2B), the second part of the Mittal Children’s Medical Centre will open in 2017 to provide modern clinical facilities for patients, families and staff. Working with Artist and Photographer in Residence Olivia Hemingway, participants experimented with different styles of photography. Drawing from the popular craze, children and young people took ‘selfies’ and collaborated with family members and friends to document areas of the hospital that were particularly familiar and poignant to them.

In their photographs, participants have thoughtfully illuminated details that may have gone unnoticed to an outside observer, homing in on hand-drawn signs, toys that they enjoyed playing with and friends they had made. Patients and staff formed strong attachments to their Cardiac Wing ‘homes’ and these connections were clearly expressed throughout this project.

Case study 5:

## Promoting a ‘sense of belonging’ (continued)



The team from Medical Illustration, former Cardiac Wing residents themselves, photographed these spaces and their images will soon be shown alongside the ‘Selfie’ project at [www.gosh.nhs.uk/gocreate](http://www.gosh.nhs.uk/gocreate)

You can also follow us on twitter @gocreateGOSH to get a preview

The photographs taken during the ‘Selfie’ project will be exhibited at GOSH at the end of August. They will be displayed on the Cardiac Wing hoardings on Levels 4, 5 and 6. You will be able to access these via the Variety Club Building corridor that previously lead to Cardiac Wing.

Case study 5:  
**In summary...**

“

During my time at GOSH I distinctly remember a favourite activity and a highlight to my days was any creative activities, which allowed me to escape from feeling poorly and at times a little lonely and feel special.”

Former patient

## Taking part in creative activity has a significant impact on the wellbeing of children and young people

The arts are a powerful tool that aid patients and families through challenging circumstances and positively impact health outcomes. Participatory art experiences give patients and families a chance to step outside of their circumstances, they offer a welcome distraction and inspire hope and faster recovery.

Creating art can provide children and young people with a sense of control, decreasing anxiety and enabling them to share their thoughts and feelings. Interactions with visiting artists can expand a child's sense of the possible and counter isolation and vulnerability. The arts are an essential and fully integrated part of the hospital environment and experience.

## Evidence based design – but from whose perspective?

Design has historically been linked to the ‘science of construction’ and as such, is based on empirical evidence (Norton-Westwood 2012) which fits with current government policy advocating the development of healthcare provision based on evidence of what works (Department of Health and The RtHon Earl Howe 2013). Kreitzer (2013b) states that ‘architecture [and] interior design... are problem-solving processes that begin by listening and understanding the needs and preferences of those who will use the space’.

However, Norton-Westwood (2012) notes the acknowledgement from both architects and design professionals that the majority of their advice and recommendations are anecdotal, as opposed to being based on evidence from ‘rigorously designed research’. Even when this research has been undertaken, the majority of evidence generated has not incorporated the views of the end user (Bishop 2012, Adams et al 2010), particularly in the context of healthcare facilities (NHS Estates 2004a). This is acknowledged by Adams et al (2010) who identify a ‘significant gap’ in our understanding of the relationship between children’s perceptions of their care linked to where that care occurs.

Coad and Coad (2008) note examples where children’s views have led to recommendations that have been incorporated into hospital environments. However, these tend to be generalised(Coad and Coad 2008) as exemplified by NHS Estates (2004a) who incorporated perspectives from children, young people and their parents, from information gathered through general reports from children’s hospitals and/or paediatric wards and departments. There is still limited research that specifically focuses on the experiences of children, and those that do, are still linked to the hospital environment (Day 2012).

Many of the views and opinions of children in relation to how the environment can enhance their experience, either as a patient or a visitor, is seldom sought or captured (van Staa et al 2011, Said 2007, Birch et al 2007, Coyne 2006). Today, with the onus on ensuring the patient experience contributes to the evaluation of services offered, it seems strange that this obvious source of advice and guidance is conspicuous by its absence. After all, according to Norton-Westwood (2012, p.7) ‘careful evaluation of space incorporating end-user input can result in

age appropriate environments that support safe, quality care and enhance a positive health-care experience for all’. This is particularly important as children’s understanding of space and how it is used, is often in ‘direct contrast’ to those of the healthcare professionals (Norton-Westwood 2012, Adams et al 2010, Said 2007).

Adams et al (2010) provide an excellent overview of the historical context of hospital design, from the post World War II construction of austere buildings that replicated those of neighbouring structures to the present day. As part of this overview, they identify the mid 1970’s as the time when “windowless, maze-like hallways, medicalized interior landscapes and unusual “smellscape” could generate feelings of “placelessness” that were recognised as contributory factors in young children’s distress (Adams et al 2010, p.658).

Contrast this to today’s hospital buildings, which use ‘non-threatening, therapeutic fantasy (van der Riet et al 2014, Adams et al 2010) using natural light (Alder Hey Children’s NHS Foundation Trust 2015a, Bromley 2012, Norton-Westwood 2012) symbols of nature (Alder Hey Children’s NHS Foundation Trust 2015c, Bromley 2012, Bird 2007) artwork (Alder Hey Children’s NHS Foundation Trust (2015d, Bishop 2012, Coad and Coad 2008) coffee shop and restaurant franchises that have pleasant aromas inducing feelings of comfort and being ‘anywhere other than a hospital’ (Bromley 2012, Adams et al 2010). Children themselves appreciate this aspect of the healthcare setting, whereby ‘architectural imagery disguised the hospital’s clinical functions (Adams et al 2010, p.666). These also provide children with features associated with activities for socialisation that would normally be undertaken on a routine basis (Bishop 2008).

## Research based techniques for eliciting children's preferences and experiences

“

Providing the child's interests remain the central focus and their creativity and effort is appreciated, then these kinds of processes are appropriate.”

Boye et al (2011) note the difficulties in eliciting the opinions of children but stress that without their views, the evaluation of services is incomplete. Fletcher et al (2011, p.40) highlight the need for researchers to 'actively consider the 'hows' of involving children more fully in all components of the research process, including the analysis of the data'.

Ekra and Gjengedal (2012) used the 'photo-voice' technique whereby children were given cameras to enable them to take pictures of activities, places and 'things' they considered to be important. These images were then used as the basis of a subsequent interview, whereby children were able to discuss their experiences following discharge from hospital. A similar technique had previously been used by Adams et al (2010) and both studies note how the photographs provided a focal point for discussion, making it easier for children to describe their experiences.

Adams et al (2010) provide some innovative investigation methods that were used to capture children's experiences of using a large hospital atrium in Canada. The participants were aged between 5–12 years of age and there were slightly more males (55%) than females.

Data collection included:

- A survey using contributions from young people to develop the design and conduct of the survey
- Child-friendly conversational interviews
- Child-led tours
- Photo-elicitation (pictures taken by the child or if they preferred the research assistant or parent of points of interest in relation to architectural or design features)

The child-friendly interviews used images captured during the child-led tours as a visual point for discussion (Adams et al 2010).

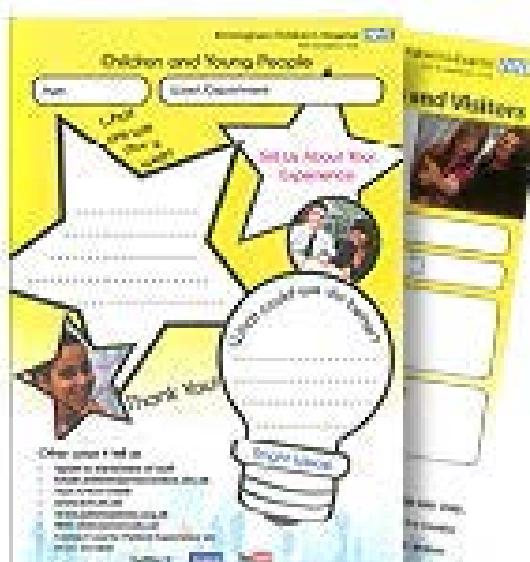
An alternative to taking photographs is the 'draw and write/tell technique which also has the advantage of eliciting children's perceptions based on the image they have drawn (Robinson 2010). The technique is considered a valid method, but care is needed to ensure reflection is representative of experience, although it still considered more appropriate than 'more adult-centric data collection methods such as questioning or interviewing', (Fletcher et al 2013, p.40).

Curtis et al (2007) produced a set of four questionnaires entitled We want to make our hospital better: can YOU help us? Two questionnaires were for children aged 11 years and under, one for inpatients and one for outpatients, while the other two questionnaires covered the same topics but for adolescents. This research generated a range of reports and outputs from this Economic and Social Research Council (ESRC) funded project, which was entitled Space to Care: Children's Perceptions of Spatial Aspects of Hospitals.

However, Carter (2009) urges caution and raises questions about the purpose and intent behind engaging children in creative activities for the purpose of capturing experiences and the intellectual property of their work. Carter concludes that providing the child's interests remain the central focus and their creativity and effort is appreciated, then these kinds of processes are appropriate.

## Engaging children and young people in the evaluation of healthcare environments

### Did you receive great care?



In projects where children have been consulted about the environment, it is usually in the design and planning phases – they are rarely asked to participate in post-occupancy evaluations (Norton-Westwood 2012, Adams et al 2010). However, when children are asked about their experiences, they tend to focus on the positive aspects (Jensen et al 2012).

Sfandyarifard (2013) suggests involvement in 'single participatory projects' is not sufficient and children should be continuously involved and efforts to capture their voices continually made.

Birmingham Children's Hospital (n.d.a) highlights the importance of engaging children and families in the evaluation of the experience they offer. The hospital offers a variety of ways in which feedback can be given, including:

- The first NHS Smartphone app which allows children, young people and their families to provide anonymous feedback to the ward or area that has been visited (Patient Experience Network 2013). The questionnaire was designed with young people to make it as 'user friendly' as possible, and it provides quantitative and qualitative feedback that is posted onto the Trust's website, with the ward generally posting responses within 24 hours (Patient Experience Network 2013).
- Feedback app that generates information that goes directly to the manager of the area that has cared for the child. This has
  - easy access on-line feedback forms
  - yellow feedback cards on the wards with one side for the patient and one for the parents and carers
  - E-mail, phone or text
  - Facebook – thoughts and opinions can be posted on their Facebook page and a response can be posted or direct contact made if necessary
  - Patient Option – an anonymous service that publishes opinions on a national website
  - Patient Advice and Liaison Service (PALS)
  - Complaints

## Recent projects that have incorporated children's views

The following projects have coverage of the engagement process that can be accessed through the associated references.



1. Image courtesy of Penny Bayliss Robbins

2. Children's workshop model for The Everybody: Young Persons Resource Centre. Image courtesy of Boex. Includes a video of the engagement process with young people, though the differing phases of engagement.

3. Design by Eleanor Brogan. Image courtesy of Alder Hey Children's NHS Foundation Trust

### The Children's Unit within Salisbury District Hospital

Bayliss Robbins (2012)  
Patient Experience Network (2013)  
Boex (2015)

### Alder Hey Hospital in the Park

Alder Hey Children's NHS Foundation Trust (2015a)  
–Progress report on the new build

Alder Hey Children's NHS Foundation Trust (2013)  
–covers the engagement process including the design by Eleanor Brogan which became the basis of the new children's hospital

Alder Hey Children's NHS Foundation Trust (2014b)  
– Monthly engagement of young people as the project progresses

- Case study 2 – Collaborative project between Northwick Park Hospital and Stanmore College
- Case study 3 – Turning the 'brief' into reality
- Case study 4 – Brief Making and the Participatory Process
- Case study 5 – GO Create! Capturing children's voices through art
- NCB and the Children's Commissioner (2013) – We would like to make a change: Children's and young people's participation in strategic health decision making

This simple three page summary provides an overview of research undertaken by the NCB on behalf of the Office for the Children's Commissioner – simple presentation of the key findings and recommendations for children's participation in the new NHS.

- Lambert et al (2013) – Social spaces for young children in hospital

The voice of younger children was noticeably absent from the literature with just one study providing detailed information on engagement methods for this age group. Lambert et al (2013, p.196) elicited views from children aged 5–8 years and noted that 'traditional consultation methods require imaginative re-thinking' and they used a 'an exploratory qualitative participatory approach'. The use of 'verbal and visual participatory methods' is described within the article and provides a useful overview on positive techniques that can be used to engage with children of this age.

## Recent projects that have incorporated children's views (continued)

“

Focus groups have been increasingly popular in the past 10 years and are a popular way of capturing the views of children.”

Art-based materials and techniques feature heavily to show what the children perceived an ideal hospital would look like (Lambert et al 2013).

- Boye et al (2011) – Children's views on the experience of a visual examination and intra-oral photographs to detect dental caries in epidemiological studies

All children are entitled to access dental care within England and this is one of the first experiences of a healthcare environment that children engage with. This article provides coverage of techniques used to elicit the views of children through focus groups interviews. Variation according to age and developmental stage is described, with children aged 5 years using puppets while children aged 10–11 years did not use a puppet.

- Coad and Coad (2008) Children and young people's preference of thematic design and colour for their hospital environment

In 2006, University Hospitals Coventry and Warwickshire NHS Trust opened a new hospital, incorporating a 'purpose-built children's unit', along with dedicated children's areas within other departments in the hospital. Coad and Coad (2008) enabled children and young people to explore and report on their preferences relating to thematic design and colour within the hospital environment, and these were then used to influence the planning of the final design.

This article provides detailed description of how children's views were elicited.

- Gibson (2007) – Conducting focus groups with children and young people: strategies for success

Focus groups have been increasingly popular in the past 10 years and are a popular way of capturing the views of children. This article provides a detailed overview on what focus groups are and although skill is needed run these effectively, they can provide a good means of data collection, that also provides a positive experience for the children who participate.

## The Friends and Family Test

**Children and Young People's Friends and Family Questions**  
We'd like to know about your experience of this team/service.

I would say this is a good team/service for my friends, family and other children to be looked after, if they needed similar treatment or care to me.

Please tick the box you agree with most.

I agree a lot	I agree a bit	I am undecided	I disagree a bit	I disagree a lot	I don't know
---------------	---------------	----------------	------------------	------------------	--------------

Draw us a picture of when they visited you or your visit.

We would like to know what was really good and what we could do better.

We are happy to hear about both what was really good and what we could do better.

What was good?

What could we do better?

It would help us to know about you.

How old are you?  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

Are you a...  What is your ethnic background?

Do you have any additional needs?

If you would like us to speak to you about your response, please tick this box and enter your contact details:  
Name:   
Phone number:   
E-mail address:

Please tick the box if a member of the staff filled out this form on behalf of the parent/family.  Please do not use my comments.

Thanks very much for taking the time to fill out the questions. It will really help Monkey make your hospital experience more enjoyable.  
FFTformCommunityChildren www.monkeywellbeing.com

The Friends and Family Test (FFT) has been designed to enable all people who use the NHS to provide feedback on their experiences 'as a standard part of their care' in an effort to continuously monitor and improve where necessary, the service being offered (NHS England 2014). From April 2015, it will be compulsory to offer all children and young people the opportunity to complete the FFT using a suitable version of the FFT question 'whether receiving care as an inpatient or an outpatient, in a day ward or accident and emergency department environment' (Picker Institute 2015).

NHS England (2014) identify the breadth of opinions being sought which ideally features feedback from a range of services that children use, including neonatal care and perhaps most importantly, those delivered in adult-centred settings such as district hospitals, which traditionally provide a less child-centred approach which can be detrimental to children's overall experience (The Society and College of Radiographers 2015a, Kennedy 2010). Ideally, the views of children as well as their families/carers will be captured, both of which are important but from differing perspectives (NHS England 2014). However, ensuring the FFT question can be answered across the age range is important so that the resulting data provides an accurate reflection of people's experiences (Picker Institute 2015).

Pilots of the forms used to capture feedback via the FFT have been trialled, using children as part of the review process (Picker Institute 2015). This revealed that younger children did not understand the wording of the FFT question used by adults, resulting in changes to the wording, as seen in the version created by Monkey Well-being (Picker Institute 2015). Monkey Well-being has produced a version of the FFT for children and one for their parents/carers, as well as versions covering inpatients, outpatients, GP surgeries and community services (Monkey Well-being 2014). A version is currently being completed for dental services.

These are available in PDF format and are downloadable free of charge from <https://www.monkeywellbeing.com/partners/nhs/>

I would say this is a good hospital for my friends and family to be looked after in, if they needed similar treatment or care to me.

Please tick one only.

- |  |   |
|--|---|
|  | <input type="checkbox"/> I agree a lot                |
|  | <input type="checkbox"/> I agree a bit                |
|  | <input type="checkbox"/> I disagree a bit             |
|  | <input type="checkbox"/> I disagree a lot             |
|  | <input type="checkbox"/> I can't decide/ I don't know |



1. Images of Monkey courtesy of Monkey Well-being [www.monkeywellbeing.com](http://www.monkeywellbeing.com)  
2. The Friends and Family Test question

## Capturing the voices of young children

“

Promoting good practice in listening to young children, so that young children's views may inform policy and improve early childhood services.”

Children's perceptions and the relative importance they place on environmental factors differ considerably from adults who speak on their behalf (NHS England 2014, Livesley and Long 2013, Sfandyarifard 2013, Alder Hey Children's NHS Foundation Trust 2013, Ekra and Gjengedal 2012, Söderbäck et al 2011, Fletcher et al 2011, Adams et al 2010, Birch et al 2007, Curtis 2007, Said 2007, Dalke et al 2005).

This is particularly relevant for very young children (Lambert et al 2013). Capturing children's views and opinions requires careful planning and can be very time consuming (Coad and Coad 2008). Techniques that can be used for older children may not be appropriate for younger children, and adult interpretation may not accurately reflect what the child wanted to convey (Picker Institute 2015).

In 2010, the NCB and Participation Works published Let's Listen: Young children's voices – profiling and planning to enable their participation in children's services. This was designed to enable practitioners working with children aged 0–5 years of age to develop a 'listening culture' within the services used by young children (NCB and Young Children's Voices Network 2010). The description within the document explains its purpose:

'Let's listen is a profiling and planning resource designed to support all those working with, and for, young children aged birth to five in developing a listening culture within their services. Active and empathetic listening supports babies and young children's learning and development, strengthens respectful relationships between young children, parents and practitioners, enables children's rights, and is at the heart of informing the quality of early years provision'.

Although Let's Listen was primarily developed for educational provision, the techniques can be usefully applied within healthcare settings, particularly for children who remain in the setting over a period of time. It can be accessed through the following link:

[http://www.participationworks.org.uk/files/webfm/files/rooms/early\\_years/Let%27slisten.pdf](http://www.participationworks.org.uk/files/webfm/files/rooms/early_years/Let%27slisten.pdf)

Young Children's Voices Network was a national support network for local authorities that ran from 2006–2011, with the aim of promoting 'good practice in listening to young children, so that young children's views may inform policy and improve early childhood services'. Although evaluated in the context of education, it covers the outcomes from the programme and what has been learned. An evaluation of the project can be accessed through the following link

[http://www.ncb.org.uk/media/61764/evaluation\\_of\\_ycvn\\_final\\_report.pdf](http://www.ncb.org.uk/media/61764/evaluation_of_ycvn_final_report.pdf)

An excellent set of downloadable resources, including 'a set of eight leaflets on a range of topics, containing details of research, practice and methods that work with young children from birth to eight' can be accessed through the following link:

<http://www.ncb.org.uk/areas-of-activity/early-childhood/resources/publications/listening-and-participation>

## **It is the simple things that make a big difference**

“

**It is often the small, simple things that can often have the most impact.”**

As noted throughout, the way people react to the environment relates to personal preference, cultural variations and the situation people find themselves in (Kreitzer 2013b). This means there are no ‘hard and fast rules’ in terms of providing generic guidelines, however there are things that can be done, and ‘it is often the small, simple things that can often have the most impact’ (Norton-Westwood 2012, p.9). As healthcare provision moves into the community, it may be useful to consider some of the following points, which emphasise some of the recurring themes that emerged as being significant to children.

- Children’s preferences change as they get older – appreciation of this needs to be reflected through the environment. In particular, children in middle childhood feel ‘trapped’ between resources for young children and young people
- Children perceive the environment through their senses – this can affect the child in positive and negative ways
- Environmental stressors induce anxiety – awareness of what these are helps to minimise anxiety i.e. cover equipment so children cannot see it or reduce noise, especially at night time
- The environment should be used to distract – artwork provides a useful medium which can be integrated as part of the environment or added through the addition of pictures or paintings
- Reflection of nature within the environment is significant and links to the healing process.
- Access to natural light and views of nature enhance the patient experience. When this cannot be achieved, symbolic access to nature needs to be provided.
- Thematic design – preferences are for the sea/beach, followed by shiny/metallic, then nature and animals
- Colours – mid colour ranges, particularly blue to green – the depth of colour increases with age from pastels to deeper shades
- Children want to be able to socialise with children of their own age and if possible those who have a similar condition so they can share experiences
- Children want play and recreational activities and facilities to be reflected throughout the whole environment – and these need to be independently accessible
- Altering the environment can be relatively simple by changing colours, lighting and texture
- Ceiling and floor tiles as well as wall coverings can be altered, particularly now with the advent of digital printing
- Technology can be used to enhance the social environment and provide a mechanism for capturing feedback
- Children and young people willingly engage in projects that will enhance aspects of the environment through the production of artwork, photography or music

## The role of philanthropy – back to the where we started

“

Our fundraising team raised over £4.4 million in 2012/13 to create modern and child-friendly environments.”

This review has noted the achievements of the UNCRC and the movement of children over the last 25 years “from passive objects of care and charity to human beings with a distinct set of rights” (Unicef 2014). While it is true that children are no longer considered ‘passive objects’ through the active encouragement for children to participate in all aspects of their care (Patient Experience Network 2013, Kennedy 2010, Bishop 2008) the role of charitable donations is as important today as it was when the first children’s hospital was opened in 1852 in London.

Schultz (cited in Kovacs Silvis 2013a) identifies that the money needed to fuel ‘pediatric projects’ is being provided through fundraising projects. Schultz goes on to state that ‘while hospital budgets remain tight, major donors and benefactors will always find a way to donate for children’s facilities.’ This position is not unique to the United States, as shown by the following examples.

Bristol Royal Hospital for Children has recently had a £31 million transformation to bring all children’s specialist services under one roof, making it one of the largest children’s hospital’s in England (University Hospitals Bristol NHS Foundation Trust 2014). However, to support the expansion of the hospital, Wallace and Gromit’s Grand Appeal was launched in 2012 to raise £3.5 million ‘to provide state of the art equipment, family facilities and child-friendly artwork’. Indeed, over the past 18 years, The Grand Appeal has raised ‘around £20 million... to fund facilities that are not funded by the NHS’ (University Hospitals Bristol NHS Foundation Trust 2012). A similar appeal has been launched for the new Alder Hey In the Park, which is due for completion later this year. Although ‘The NHS can afford to pay for he hospital... Alder Hey Children’s

Charity urgently needs your help to raise £30 million to fund a higher specification of medical equipment, install amazing technology and facilities, and fund arts programmes as well as vital research’. Visiting a variety of children’s hospitals web sites, virtually all had a news story about fundraising, an acknowledgement of support offered by local charities or a link to the associated hospital charity on the home page. The contribution of charitable donations that enhance the experience for patients and their families is significant. For example, Birmingham Children’s Hospital (n.d.c.) note “Our fundraising team raised over £4.4 million in 2012/13 to create modern and child-friendly environments” amongst other things such as ‘state of the art equipment’ and research into childhood illness. All the work featured in Waterworld and Treetops for the new Children’s Unit at Salisbury District Hospital was funded by donations raised by Star’s Appeal Caring 4Kids campaign, totalling £1 million (Bayliss Robbins 2012). In most cases, the money is raised to provide ‘additional facilities and equipment’ and it is often these additional extras that enhance the environment which in turn improves children’s experiences.

As healthcare provision moves back into the community (Royal College of Nursing 2014), the role of charities will become increasingly significant as small scale provision reflects the needs of the local community (Noah’s Ark Children’s Hospice 2014). Unlike health services prior to 1852, children now utilise up 25% of the provision (Coad and Coad 2008) and lessons learned from children about what they perceive to be a child-friendly environments should be reflected throughout health service provision, promoting positive experiences that enhance the healing process.

# References

References	170
Acknowledgements	176
A final thought...	177



## References

- Action for Sick Children (2015) Welcome to Action for Sick Children! Online. <http://www.actionforsickchildren.org.uk/> Accessed: 2 January 2015.
- Adams, A., Theodore, D., Goldenberg, E., McLaren, C. and McKeever, P. (2010) Kids in the atrium: Comparing architectural intentions and children's experiences in a pediatric hospital lobby. *Social Science & Medicine*, 70 p. 658–667.
- Alder Hey Children's NHS Foundation Trust (2015a) Our future – Alder Hey in the Park. Online: Available: <http://www.alderhey.nhs.uk/alder-hey-in-the-park/> Accessed: 25 February 2015.
- Alder Hey Children's NHS Foundation Trust (2015b) Robot Ward At Alder Hey! Online. Available: <http://www.alderhey.nhs.uk/robot-ward-at-alder-hey/> Accessed: 25 February 2015.
- Alder Hey Children's NHS Foundation Trust (2015c) Art Around The Hospital. Online. Available: <http://www.alderhey.nhs.uk/departments/arts-for-health/art-for-alder-hey-in-the-park/> Accessed: 27 February 2015.
- Alder Hey Children's NHS Foundation Trust (2015d) Art for Alder Hey In The Park. Online. Available: <http://www.alderhey.nhs.uk/departments/arts-for-health/art-for-alder-hey-in-the-park/> Accessed: 27 February 2015.
- Alder Hey Children's NHS Foundation Trust (2014) Joseph Mitchell Remembered At Alder Hey. Online. Available: <http://www.alderhey.nhs.uk/joseph-mitchell-remembered-at-alder-hey/> Accessed: 25 February 2015.
- Alder Hey Children's NHS Foundation Trust (2014b) Meet The Girls With An Eye For Arts And Design At Alder Hey. Online. Available: <http://www.alderhey.nhs.uk/meet-the-girls-with-an-eye-for-arts-and-design-at-alder-hey/> Accessed: 25 February 2015.
- Alder Hey Children's NHS Foundation Trust (2013) Alder Hey Link, July 2013: Improving Patient Experience through Engagement. Alder Hey Children's NHS Foundation Trust.
- Alder Hey Children's NHS Foundation Trust (2012) Alder Hey Strategic Plan: 2012/13 to 2-15/16. Alder Hey Children's NHS Foundation Trust.
- Allen, S. and Gordon, P. (2011) How children learn 4: Thinking on special educational needs and inclusion. Practical Pre-School Books.
- Anonymous (2011) Building Design. CPD: Module 6 – Healthcare environments. CMP Information Ltd.
- Arksey, H. and O'Malley, L. (2005) Scoping Studies: Towards a Methodological Framework. *International Journal of Social Research Methodology*, 8 (1) p.19–32.
- Aveyard, H. (2010) Doing a literature Review in Health and Social Care: A practical guide. 2nd ed. Maidenhead: Open University Press.
- Baldwin, N. (2010) The History of The Hospital for Sick Children at Great Ormond Street (1852–1914). Online. <http://www.hharp.org/library/gosh/general/history.html> Accessed: 28 December 2014.
- Barlow, J. and Blair, M. (2013) Life stage: Early years. In: Annual Report of the Chief Medical Officer 2012, Our Children Deserve Better: Prevention Pays. Department of Health, Chapter 6 p.1–13.
- Barron, P. (2013) Black Toothed Ruth Black (Monstrous Morals). Pro-Actif Communications.
- Bayliss Robbins, P. (2012) Waterworld and Treetops: Designed with Children for Children. Salisbury: ArtCare Publications.
- BBC News (2012) In pictures: 150 years of Birmingham Children's Hospital. Online. <http://www.bbc.co.uk/news/uk-england-birmingham-17386457> Accessed: 17 January 2015.
- Biddiss, E.; McKeever, P. and Shea, G. (2011) The Art of Waiting – Interactive displays in healthcare settings. (paper presented at CHI 2011, Vancouver, May 7–12, 2011. Online. Available [http://largedisplaysinurbanlife.cpsc.ucalgary.ca/PDF/biddiss\\_final.pdf](http://largedisplaysinurbanlife.cpsc.ucalgary.ca/PDF/biddiss_final.pdf) 11 September 2014.
- Birch, J., Curtis, P. and James, A. (2007) Sense and Sensibilities: In Search of the Child-Friendly Hospital. *Built Environment*, 33 (4), p. 405–416.
- Bird, W. (2007) Natural thinking. Investigating the links between the Natural Environment, Biodiversity and Mental Health. Royal Society for the Protection of Birds.
- Birmingham Children's Hospital (n.d.a) Patient and Family Feedback. Online. <http://www.bch.nhs.uk/Feedback> Accessed: 19 January 2015.
- Birmingham's Children's Hospital (n.d.b) Dignity Suits. Online. <http://www.bch.nhs.uk/story/dignity-suits> Accessed: 19 January 2015.
- Birmingham Children's Hospital (n.d.c) Fundraising: Help us by giving. Online. <http://www.bch.nhs.uk/corporate/appeal> Accessed: 19 January 2015.
- Birmingham Children's Hospital (n.d.d) Ward 15 (Oncology). Online. <http://www.bch.nhs.uk/story/whats-it/take-look-around/ward-15-oncology> Accessed: 17 January 2015.
- Birmingham Children's Hospital (n.d.e) Privacy and dignity. Online. Available: <http://www.bch.nhs.uk/story/whats-it/privacy-and-dignity> Accessed: 2 March 2015.
- Bishop, K. (2012) The Role of Art in a Paediatric Healthcare Environment from Children's and Young People's Perspectives. *Procedia – Social and Behavioral Sciences* 38 p.81 – 88.
- Bishop, K. (2008) Through Children's Eyes: Understanding how to create supportive healthcare environments for children. Online. Available: 28 February 2015.
- Blades, R., Renton, Z., La Valee, I., Clements, K., Gibb , J. and Lea, J. (2013) We would like to make a change: Children and young people's participation in strategic health decision-making. London: Office of the Children's Commissioner.

- Boex (2015a) Teen & Children's Waiting Room. Online. Available: <http://www.boex.co.uk/project/teen-childrens-waiting-room/> Accessed: 31 January 2015.
- Boex (2015b) Family room. Online. Available: <http://www.boex.co.uk/project/family-room/> Accessed 2 March 2015.
- Boex (2014) Outer Space! A Children's waiting room design... Online. <http://www.boex.co.uk/childrens-waiting-room-design/> Accessed: 31 January 2015.
- Boex (2012) Healthcare Products to Enhance Environments. Online. Available: <http://www.boex.co.uk/healthcare-products-to-enhance-environments/> Accessed: 28 February 2015.
- Boex (n.d.) Young Persons Healthcare Centre. Online. Available: <http://www.boex.co.uk/project/waiting> Accessed: 6 March 2015.
- Bojelian, A. (2015) "In The Blink Of An Eye" Poems by Adam Bojelian. Online. Available: <http://intheblinkofaneyepoemsbyadambojelian.blogspot.co.uk/> Accessed: 2 March 2015.
- Bojelian, A. (2014a) It's a wonderful NHS! "In The Blink Of An Eye" Poems by Adam Bojelian. 22 December 2014. Online. Available: <http://intheblinkofaneyepoemsbyadambojelian.blogspot.co.uk/2014/12/its-wonderful-nhs.html> Accessed: 1 March 2015.
- Bojelian, A. (2014b) My #FUNFUND for LEEDS CHILDREN'S HOSPITAL APPEAL #WeAllMatter! "In The Blink Of An Eye" Poems by Adam Bojelian. 4 June 2014. Online. Available: <http://intheblinkofaneyepoemsbyadambojelian.blogspot.co.uk/2014/06/my-funfund-for-leeds-childrens-hospital.html> Accessed: 2 March 2015.
- Bojelian, A. (2014c) A Letter to UK Paediatricians . "In The Blink Of An Eye" Poems by Adam Bojelian. 28 July 2014. Online. Available: <http://intheblinkofaneyepoemsbyadambojelian.blogspot.co.uk/2014/07/a-letter-to-uk-paediatricians.html> Accessed: 1 March 2015.
- Boyd, D. and Bee, H. (2012) *The developing child*. 13th ed. Pearson.
- Boye, U., Foster, G., Pretty, I. and Tickle, M. (2012). Children's views on the experience of a visual examination and intra-oral photographs to detect dental caries in epidemiological studies. *Community Dental Health*, 29, p.284–288.
- Bridgewater Community Healthcare NHS Trust (2014) What matters to our patients – Bridgewater Community Healthcare NHS Trust. [Online]. [https://www.youtube.com/watch?v=D-N\\_IR-dQEo](https://www.youtube.com/watch?v=D-N_IR-dQEo) Accessed: 14 December 2014.
- Bromley, E. (2012) Building patient-centeredness: Hospital design as an interpretive act. *Social Science & Medicine*, 75, p.1057–1066.
- Bronfenbrenner, U. (1994) Ecological models of human development. In: International Encyclopaedia of Education, Volume 3, 2nd ed. Oxford: Elsevier.
- Bull, A., Gillies, M. and Yorkhill Division/Women and Children's Directorate (2007) Spiritual needs of children with complex healthcare needs in hospital. *Paediatric nursing*, 19 (9), p.34–38.
- Care Quality Commission (2014a) Alder Hey Children's Hospital Quality Report. Care Quality Commission.
- Care Quality Commission (2014b) Sheffield Children's Hospital Quality Report. Care Quality Commission.
- Carter, B. (2009) Tick box for child? The ethical positioning of children as vulnerable, researchers as Barbarians and reviewers as overly cautious. *International Journal of Nursing Studies*, 46 (6) p.858–64.
- Central Manchester Foundation Trust (2015) Royal Manchester Children's Hospital. Online. <http://www.cmft.nhs.uk/childrens-hospitals.aspx> Accessed: 18 January 2015.
- Central Manchester University Hospitals (2015) Infection Control: How can you help as a Patient? Online. Available: <http://www.cmft.nhs.uk/information-for-patients-visitors-and-carers/infection-control/how-can-you-help-as-a-patient> Accessed 15 February 2015.
- Chief Nursing Officer (2007) Privacy and Dignity – A report by the Chief Nursing Officer into mixed sex accommodation in hospitals. Department of Health.
- Christchurch C of E Primary School (2011) Event – Donating to Birmingham Children's Hospital. Online. Available: <http://www.christch.bham.sch.uk/event-childrenhospital.htm> Accessed 31 January 2015.
- Clift, L.; Dampier, S. and Timmons, S. (2007) Adolescents' experiences of emergency admission to children's wards. *Journal of Child Health Care*, 11(3) p.195–207.
- Coad, J. and Coad, N. (2008) Children and young people's preference of thematic design and colour for their hospital environment. *Journal of Child Health Care*, 12 (1) p.33–48.
- Committee on the Rights of the Child (2013) CRC General Comment on the right of the child to the enjoyment of the highest attainable standard of health (art. 24). United Nations.
- Collins, M. (2012) An Introductory Video to Wayfinding. Online. Available: <http://way-finding.co.uk/what-is-wayfinding/> Accessed: 22 February 2015.
- Coyne, I. (2006) Children's experiences of hospitalization. *Journal of Child Health Care*, 10(4) p.326–336.
- Coyne, I. and Kirwan, L. (2012) Ascertaining children's wishes and feelings about hospital life. *Journal of Child Health Care*, 16(3) p.293–304.
- Crammer, K. and Davenport, L. (2013) Quiet Time In A Pediatric Medical/Surgical Setting. *Journal of Pediatric Nursing*, 28 (4) p.400–405.
- Crystal, G. (2014) Preparing Your Child For Their First Dental Visit. [Online]. <http://www.safedentistry.co.uk/PreparingYourChildForTheirFirstDentalVisit.html> Accessed: 14 December 2014.
- Curtis, P. (2007) Space to care: children's perceptions of spatial aspects of hospitals: Full Research Report. ESRC End of Award Report, RES-000-23-0765. Swindon: ESRC.
- Curtis, P., James, A. and Birch, J. (2007a) Policy makers, architects and planners: evaluating children's and young people's healthcare environments using ACE: Aspect: Children's Environments. University of Sheffield; ESRC.
- Curtis, P., James, A. and Birch, J. (2007b) Healthcare professionals' assessment tool for specific hospital areas. University of Sheffield.
- Curtis, P., James, A. and Birch, J. (2007c) We want to make our hospital better: can YOU help us? Child Friendly Hospital Evaluation Tool for Children's Inpatients (for use by children under 11) University of Sheffield.
- Curtis, P., James, A. and Birch, J. (2007d) We want to make our hospital better: can YOU help us? Child Friendly Hospital Evaluation Tool for Children's Outpatients (for use by children under 11). University of Sheffield.
- Curtis, P., James, A. and Birch, J. (2007e) We want to make our hospital better: can YOU help us? Child Friendly Hospital Evaluation Tool for Children's Outpatients (for use by adolescents). University of Sheffield.
- Day, J. (2012) Using design to improve the healthcare experiences for children and young persons in primary care practices. Loughborough University's Institutional Repository.
- DH – Children and Young People (2011) You're Welcome – Quality criteria for young people friendly health services. London: Department of Health.

- DH Estates and Facilities (2008a) Achieving Excellence Design Evaluation Toolkit Workbook. Department of Health.
- DH Estates and Facilities (2008b) A Staff and Patient Calibration Toolkit documentation. Department of Health.
- Dalke, H., Little, J., Niemann, E., Camgoz, N., Steadman, G., Hill, S. and Stott, L. (2005) Colour and lighting in hospital design. *Optics & Laser Technology*, 38, p.343–365.
- Department of Health (2014) Refreshing the NHS Outcomes Framework 2015–2016: Stakeholder Engagement. Online. [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/341391/14-07-30\\_NHS\\_Outcomes\\_Framework\\_Stakeholder\\_Engagement\\_Document.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/341391/14-07-30_NHS_Outcomes_Framework_Stakeholder_Engagement_Document.pdf) Accessed: 30 December 2014.
- Department of Health (2013a) Guide to the Healthcare System in England. The Stationery Office.
- Department of Health (2013b) NHS Outcomes Framework 2014/15. Online. [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/256456/NHS\\_outcomes.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/256456/NHS_outcomes.pdf) Accessed: 30 December 2014.
- Department of Health (2013c) The NHS Constitution: The NHS belongs to all of us. Department of Health.
- Department of Health (2013d) Infographic: The health and care system explained. Online. Available: <http://media.dh.gov.uk/uploads/infographic/Full%20Size%20HTML/index.html> Accessed: 22 February 2015.
- Department of health (2013e) Guidance: The health and care system explained. Online. Available: <https://www.gov.uk/government/publications/the-health-and-care-system-explained/the-health-and-care-system-explained> Accessed: 22 February 2015.
- Department of Health and The Rt Hon Earl Howe (2013) Policy: Increasing research and innovation in health and social care Online. <https://www.gov.uk/government/policies/increasing-research-and-innovation-in-health-and-social-care> Accessed: 17 January 2015.
- Department of Health and Department of Skills and Education (2004) National Service Framework for Children, Young People and Maternity Services: Standard 8: Disabled children and young people and those with complex health needs. Department of Health.
- Department of Health, Partnerships for Children, Families and Maternity (2011) NHS at Home: Community Children's Nursing Services. Department of Health.
- Dinnen, S. and Ware, S. (2014) Policy and Practice. In: Tonkin, A. (ed.) *Play in Healthcare: Using play to promote child development and well-being*. Oxon: Routledge, p.126-140.
- E1 Entertainment (2013) Peppa Pig: Dentist trip. [Kindle edition]. Available: <http://www.amazon.co.uk> Accessed: 6 March 2015.
- Eisen, S., Ulrich, R., Shepley, M., Varni, J. and Sherman, S. (2008) The stress-reducing effects of art in pediatric health care: art preferences of healthy children and hospitalized children. *Journal of Child Health Care*, 12 (3) p.173–190.
- Ekra, E.; Blaaka, G.; Korsvold, T. and Gjengedal, E. (2012) Children in an adult world: A phenomenological study of adults and their childhood experiences of being hospitalised with newly diagnosed type 1 diabetes. *Journal of Child Health Care*. 16 (4) p.395–405.
- Ekra, E. and Gjengedal, E. (2012) Being hospitalized with a newly diagnosed chronic illness\* A phenomenological study of children's lifeworld in the hospital. *International Journal of Qualitative Studies on Health and Well-being*. Online. Available: <http://www.ijqhw.net> Accessed: 1 February 2015.
- European Association for Children in Hospital (2014) EACH Charter / The 10 articles of the EACH Charter. Online. <http://www.each-for-sick-children.org/each-charter/the-10-articles-of-the-each-charter.html> Accessed: 18 January 2015.
- European Healthcare Design (2015) Call for Papers; Empowering Patients: Transforming the Health Economy by Design. European Healthcare Design.
- Evelina London (2015) Guides and Scouts at Evelina London. Online. Available: <http://www.guysandstthomas.nhs.uk/our-services/children/patients/guides-and-scouts-at-evelina-london.aspx> Accessed: 19 January 2015.
- Experia (2014) Sensory ceilings. Online. Available: <http://www.experia-innovations.co.uk/sensory-products/sensoryceilings> Accessed: 23 February 2015.
- Farjou, G., Sinha, R., Dix, D., Shahbaz, A., Klaassen, R. and Klassen, A. (2013) Understanding the healthcare experiences of teenaged cancer patients and survivors. *Child: care, health and development*, 40 (5) p.723–730.
- Festini, F., Occhipinti,V., Cocco, M., Biermann, K., Neri, S., Giannini, C., Galici, V., de Martino, M. and Caprilli, S. (2008) Use of non-conventional nurses' attire in a paediatric hospital: a quasi-experimental study. *Journal of Clinical Nursing*, 18, p.1018–1026.
- Fletcher, T., Glasper, A., Prudhoe, G., Battrick, G., Coles, L., Weaver, K. and Ireland, L. (2011) Building the future: children's views on nurses and hospital care. *British Journal of Nursing*, 20 (1), p.39–45.
- Foot, C., Gilbert, H., Dunn, P., Jabbal, J., Seale, B., Goodrich, J., Buck, D. and Taylor, J. (2014) People in control of their own health and care: The state of involvement. London: The King's Fund.
- Ford, K. (2011) 'I didn't really like it, but it sounded exciting': Admission to hospital for surgery from the perspectives of children. *Journal of Child Health Care*, 15(4) p.250–260.
- Forsner, M., Jansson, L. and Söderberg, A. (2009) Afraid of Medical Care: School-Aged Children's Narratives About Medical Fear. *Journal of Pediatric Nursing*, 24 (6), p.519–528.
- Gesler, W., Bell, M., Curtis, S., Hubbard, P. and Francis, S. (2004) Therapy by design: evaluating the UK hospital building program. *Health & Place*, 10 p.117–128.
- Gibson, F., Aldiss, S., Horstman, M., Kumpunen, S. and Richardson, A. (2010) Children and young people's experiences of cancer care: A qualitative research study using participatory methods. *International Journal of Nursing Studies*, 47 p. 1397–1407.
- Gibson, F. (2007) Conducting focus groups with children and young people: strategies for success. *Journal of Research in Nursing*, 12 (5) p.473–483.
- Great Ormond Street Hospital for Children NHS Foundation Trust (2015a) Children's Zone: Getting a good night's sleep. Online. Available at: <http://www.gosh.nhs.uk/children/staying-in-hospital/getting-a-good-nights-sleep/> Accessed: 21 February 2015.
- Great Ormond Street Hospital for Children NHS Foundation Trust (2015b) Seaside in the main entrance. Online. Available: <http://www.gosh.nhs.uk/about-us/our-priorities/go-create-arts-programme/commissions/seaside-in-the-main-entrance/> Accessed: 25 February 2015.
- Great Ormond Street Hospital for Children NHS Foundation Trust (2015c) Commissions. Online. Available: <http://www.gosh.nhs.uk/about-us/our-priorities/go-create-arts-programme/commissions/> Accessed: 25 February 2015.
- Great Ormond Street Hospital for Children NHS Foundation Trust (2014) Our history. Online. <http://www.gosh.nhs.uk/about-us/our-history/> Accessed: 28 December 2014.
- Harris, R. (2014) The Foundling Hospital. Online. Available: [http://www.bbc.co.uk/history/british/victorians/foundling\\_01.shtml](http://www.bbc.co.uk/history/british/victorians/foundling_01.shtml) Accessed: 28 December 2014.

- Hawkins, S. (2010) Extending the Boundaries of Care: the emergence of children's hospitals in 19th century Britain. Online. <http://www.hharp.org/academic-resources/> Accessed: 28 December 2014.
- Herbert, A., De Lima, J., Fitzgerald, D., Seton, C., Waters, K. and Collins, J. (2014) Exploratory study of sleeping patterns in children admitted to hospital. *Journal of Paediatrics and Child Health*, 50, p.632–638
- Historic Hospital Admissions Records Project (HHARP) (2010) Online. Available: <http://www.hharp.org> Kingston University: Accessed 14 February 2015.
- Hubbuck, C. (2009) Play for Sick Children: Play Specialists in Hospitals and Beyond. London: Jessica Kingsley Publishers.
- Hunt, R. and Brychta, A. (2014) Going to the Dentist: first experiences with Biff, Chip and Kipper. Kindle version. Available: <http://amazon.co.uk>
- Ives, M (2013) Way-finding for Children's Hospitals. Negotiated Production Blog, 18 October 2013 Online. Available: <http://marthavies-nproduction.blogspot.co.uk/2013/10/wayfinding-for-childrens-hospitals.html> Accessed: 22 February 2015.
- James, A., Curtis, P. and Birch, J. (2007) Space to Care: Children's perceptions and experiences of hospital space. Online. Available: [http://www.shef.ac.uk/polopoly\\_fs/1.221751!/file/Research-briefing\\_James\\_spacetocare.pdf](http://www.shef.ac.uk/polopoly_fs/1.221751!/file/Research-briefing_James_spacetocare.pdf) Accessed: 15 February 2015.
- Jensen, C., Jackson, K., Kolbæk, R. and Glasdam, S. (2012) Children's experiences of acute hospitalisation to a paediatric emergency and assessment unit – A qualitative study. *Journal of Child Health Care*, 16 (3) p.263–273.
- Kennedy, I. (2010) Getting it right for children and young people. Overcoming cultural barriers in the NHS so as to meet their needs. London: Department of Health.
- Kovacs Silvis, J. (2013a) Children's Hospital Design Grows Up. Online. <http://www.healthcaredesignmagazine.com/article/childrens-hospital-design-grows> Accessed: 18 January 2015.
- Kovacs Silvis, J. (2013b) 5 Design Strategies To Create Competitive Children's Facilities. Online. <http://www.healthcaredesignmagazine.com/blogs/jennifer-kovacs-silvis/5-design-strategies-create-competitive-children-s-facilities> Accessed: 18 January 2015.
- Kreitzer, M. (2013a) What Impact Does the Environment Have on Us? Online. Available: <http://www.takingcharge.csh.umn.edu/explore-healing-practices/healing-environment/what-impact-does-environment-have-us> Accessed: 21 December 2014.
- Kreitzer, M. (2013b) Are There Design Rules to Follow? Online. Available: <http://www.takingcharge.csh.umn.edu/explore-healing-practices/healing-environment/are-there-design-rules-follow> Accessed: 21 December 2014.
- Kreitzer, M. (2013c) Healing Environment. Online. Available: <http://www.takingcharge.csh.umn.edu/explore-healing-practices/healing-environment> Accessed: 22 February 2015.
- Kreitzer, M. (2013d) What Can I Do to Create a Healing Environment? Online. Available: <http://www.takingcharge.csh.umn.edu/explore-healing-practices/healing-environment/what-can-i-do-create-healing-environment> Accessed 22 February 2015.
- Kreitzer, M. (2012) What is Happening in Healthcare Settings Today? Online. Available: <http://www.takingcharge.csh.umn.edu/explore-healing-practices/healing-environment/what-happening-healthcare-settings-today> Accessed 16 February 2015.
- Lambert, V., Coad, J., Hicks, P. and Glacken, M. (2014) Young children's perspectives of ideal physical design features for hospital-built environments. *Journal of Child Health Care*, 18 (1) p.57–71.
- Lambert, V., Coad, J., Hicks, P. and Glacken, M. (2013) Social spaces for young children in hospital. *Child: care, health and development*, 40 (2) p.195–204.
- Lankston, L., Cusack, P., Freemantle, C. and Isles, C. (2010) Visual art in hospitals: case studies and review of the evidence. *Journal of the Royal Society of Medicine*, 103, p.490–499.
- Lemer, C., Hargreaves, D., Cheung, R. and Streitz, J. (2013) Chapter 2 – Overview. In: Davies, S. (ed) Annual Report of the Chief Medical Officer 2012: Our Children Deserve Better: Prevention Pays. Department of Health, p.1–26.
- Linder, L. and Christian, B. (2011) Characteristics of the Nighttime Hospital Bedside Care Environment (Sound, Light, and Temperature) for Children with Cancer. *Cancer Nursing*, 34 (3) p.176–184.
- Lucas, G. (2010) Landor Associates' new way-finding systems for Great Ormond Street Hospital. *Creative Review Blog*. 13 December 2010. Online. Available: <http://www.creativereview.co.uk/cr-blog/2010/december/landor-associates-new-wayfinding-systems-for-great-ormond-street-hospital> Accessed: 22 February 2015.
- Lugasi, T., Achille, M. and Stevenson, M. (2011) Patients' Perspective on Factors That Facilitate Transition From Child-centered to Adult-centered Health Care: A Theory Integrated metasummary of Quantitative and Qualitative Studies. *Journal of Adolescent Health*, 48, p.429–440.
- Livesley, J. and Long, T. (2013) Children's experiences as hospital in-patients: Voice, competence and work. Messages for nursing from a critical ethnographic study. *International Journal of Nursing Studies* 50 p.1292–1303.
- McKenzie, S., Norrish, S., Parker, L. and Frampton, I. (2010) Young people and healthcare. Part I: Experience of the hospital environment. *Pediatric health*, 4 (2) p.157–166.
- McGrath, K. (n.d.) The Good-night guide for children. Skipton: The Sleep Council.
- McQue, H. (2009) Dental Surgery Planning. Online. Available: <http://www.hospitaldesigntips.com/2009/01/dental-surgery-planning/> Accessed: 31 January 2015.
- Maslow, A. (1943) A theory of human motivation. *Psychological Review*, 50 (4), p.370–96.
- Mathers, S.; Anderson, H. and McDonald, S. (2011) A survey of imaging services for children in England, Wales and Scotland. *Radiography*, 17 (1) p.20–27.
- Monkey Well-being (2014) Friends and Family Test (FFT) Downloads. Online. Available: <https://www.monkeywellbeing.com/friends-family-test-fft-downloads/> Accessed 28 February 2015.
- Murphy, J. (2008) Medically stable children in PICU: better at home. *Paediatric nursing*, 20 (1) p.14–16.
- National Child and Maternal Health Intelligence Network (2014) NHS Atlas of Variation in Healthcare for Children and Young People. Online. <http://www.chimat.org.uk/cmo2012> Accessed: 18 January 2015.
- Newcastle upon Tyne Hospitals NHS Foundation Trust (2015a) Children's Services: Welcome to the Great North Children's Hospital. Online. <http://www.newcastle-hospitals.org.uk/services/childrens.aspx> Accessed: 19 January 2015.
- Newcastle upon Tyne Hospitals NHS Foundation Trust (2015b) You're Welcome. Online. [http://www.newcastle-hospitals.org.uk/services/childrens\\_youre-welcome.aspx](http://www.newcastle-hospitals.org.uk/services/childrens_youre-welcome.aspx) Accessed: 19 January 2015.
- NCB and the Children's Commissioner (2013) We would like to make a change: Children's and young people's participation in strategic health decision making. Online. Available: [http://www.ncb.org.uk/media/1079523/participation\\_in\\_strategic\\_health\\_decision-making\\_-cyp\\_summary.pdf](http://www.ncb.org.uk/media/1079523/participation_in_strategic_health_decision-making_-cyp_summary.pdf) Accessed: 2 March 2015.

- NCB and Young Children's Voices Network (2010) Let's Listen: Young children's voices – profiling and planning to enable their participation in children's services. NCB and Participation Works.
- NHS Business Services Authority (2012) Crime Awareness Toolkit. Online. Available: <http://www.nhsbsa.nhs.uk/3643.aspx> Accessed: 2 March 2015.
- NHS Choices (2013a) Children's teeth. [Online]. <http://www.nhs.uk/Livewell/dentalhealth/Pages/Careofkidsteeth.aspx> Accessed: 14 December 2014.
- NHS Choices (2013b) The history of the NHS in England. Online. <http://www.nhs.uk/NHSEngland/thens/nhshistory/Pages/NHShistory1948.aspx> Accessed: 30 December 2014.
- NHS Choices (2013c) How much sleep do kids need? Online. Available: <http://www.nhs.uk/Livewell/Childrenssleep/Pages/howmuchsleep.aspx> Accessed: 20 February 2015.
- NHS England (2014) Friends and Family Test. NHS England.
- NHS Estates (2004a) Improving the patient experience: Friendly healthcare environments for children and young people. London: The Stationery Office.
- NHS Estates (2004b) HBN 23: Hospital accommodation for children and young people. London: The Stationery Office.
- NHS Institute for Innovation and Improvement (2013) 15 steps challenge. Online. <http://www.institute.nhs.uk/productives/15stepschallenge/15stepschallenge.html> Accessed: 22 December 2014.
- NHS Institute for Innovation and Improvement (2012) The 15 steps challenge: Quality from a patient's perspective. NHS Institute for Innovation and Improvement.
- NICE National Institute for Health and Care Excellence (2014) Schools should help children learn how to brush their teeth. Online. Available: <http://www.nice.org.uk/news/article/schools-should-help-children-learn-how-to-brush-their-teeth> Accessed: 30 December 2014.
- Noah's Ark Children's Hospice (2014) Aboard the Ark: Autumn 2014. Online. Available: [http://noahsarkhospice.org.uk/media/92412/aboard\\_the\\_ark\\_autumn\\_2014.pdf](http://noahsarkhospice.org.uk/media/92412/aboard_the_ark_autumn_2014.pdf) Accessed: 2 March 2015.
- Norton-Westwood, D. (2012) The health-care environment through the eyes of a child—Does it soothe or provoke anxiety? International Journal of Nursing Practice, 18 p.7–11.
- O'Hara, J. and Isden, R. (2013) Identifying risks and monitoring safety: the role of patients and citizens. London: The Health Foundation.
- Office of the High Commissioner for Human Rights (1989) Convention on the Rights of the Child. Office of the High Commissioner for Human Rights.
- Oxford University Press (2015a) Definition of environment in English. Online. Available: <http://www.oxforddictionaries.com/definition/english/environment> Accessed: 1 March 2015.
- Oxford University Press (2015b) Definition of privacy in English. Online. Available: <http://www.oxforddictionaries.com/definition/english/privacy> Accessed: 2 March 2015.
- Patient Experience Network (2013) Improving Patient Experience for Children and Young People. NHS England.
- Paintings in Hospitals (2015a) About paintings in hospitals. Online. Available: <http://paintingsinhospitals.org.uk/about-us/about-us> Accessed: 20 February 2015.
- Paintings in Hospitals (2015b) Background. Online. Available: <http://www.paintingsinhospitals.org.uk/evidence/background> Accessed: 20 February 2015.
- Panda, A., Garg, I. and Bhobe, A. (2014) Children's perspective on the dentist's attire. International Journal of Paediatric Dentistry, 24, p.98–103.
- Philips Medical Systems (2007) Improving the patient experience Philips Ambient Experience: a people focused solution for CT. Eindhoven: Philips Medical Systems.
- Picker Institute (2015) Picker Institute Europe supports improvement in Friends and Family Test question for children and young people. Online. Available: <http://www.pickereurope.org/news/picker-institute-europe-release-recommended-friends-family-test-question-children-young-people/> Accessed: 2 March 2015.
- Pound, L. (2009) How children learn 3: Contemporary thinking and theorists. London: MA Education Ltd.
- Pound, L. (2005) How children learn: from Montessori to Vygotsky – educational theories and approaches made easy. Step Forward Publishing.
- Powell, C. (2015) Worth getting out of bed for. Online. Available: <http://www.artspprofessional.co.uk/magazine/281/article/worth-getting-out-bed> Accessed: 25 February 2015.
- Professor the Lord Darzi of Denham KBE (2008) High quality care for all: NHS Next stage review final report. The Stationery Office.
- Public Health England (2014) New PHE survey finds 12% of 3 year olds have tooth decay. Online. Available: <https://www.gov.uk/government/news/new-phe-survey-finds-12-of-3-year-olds-have-tooth-decay> Accessed: 6 March 2015.
- Quan, X. and Joseph, A. (2011) Healthcare Environmental Terms and Outcome Measures: An Evidence-based Design Glossary. California: The Center for Health Design.
- Randall, D. and Hallowell, L. (2012) 'Making the bad things seem better': Coping in children receiving healthcare. Journal of Child Health Care, 16 (3) p.305–313.
- Rivett, G. (2009) National Health Service History. Online. Available: <http://www.nhshistory.net/shorthistory.htm> Accessed: 2 January 2015.
- Roberts, C. (2010) Unaccompanied Hospitalized Children: A Review of the Literature and Incidence Study. Journal of Pediatric Nursing 25, p. 470–476.
- Robinson, S. (2010) Children and young people's views of health professionals in England. Journal of Child Health Care, 14(4) p.310–326.
- Rounds, L. (2015) Bronfenbrenner's Ecological Systems Theory of Development: Definition and example. Online. <http://education-portal.com/academy/lesson/bronfenbrenners-ecological-systems-theory-of-development-definition-examples.html#lesson> Accessed: 19 January 2015.
- Royal College of Nursing (2014) The future for community children's nursing: challenges and opportunities: RCN guidance. London: Royal College of Nursing.
- Said, I. (2007) Architecture for Children: Understanding Children Perception towards Built Environment. Online. Available: [http://eprints.utm.my/3575/1/Architectural\\_EDU2.pdf](http://eprints.utm.my/3575/1/Architectural_EDU2.pdf) Accessed 15 February 2015.
- Science Museum (2014) Brought to life: Hospitals. Online. <http://www.sciencemuseum.org.uk/broughttolife/themes/hospitals.aspx> Accessed: 28 December 2014.
- Sfandyarifard, E. (2013) An investigation into the consideration of children and young peoples' preferences in children's hospital design. PhD thesis, University of Salford.
- Sitzman, K. and Leiss, J. (2009) Documentation of incidental factors affecting the home healthcare work environment. Home Healthcare Nurse, 27 (9) p.516–521.
- Smith, R. (2010) Bird song 'may calm' children receiving injections. The Telegraph, 24 August 2010, Online. Available: <http://www.telegraph.co.uk/> Accessed: 1 March 2015.

- Society of Radiographers (2015) Children's Imaging Taskforce Resources: Advice on waiting and changing room facilities. Online. Available: <http://www.sor.org/practice/hot-topics/children> Accessed: 1 March 2015.
- Society and College of Radiographers (2009) Practice Standards for the Imaging of Children and Young People. London: Society and College of Radiographers.
- Söderbäck, M., Coyne, I. and Harder, M. (2011) The importance of including both a child perspective and the child's perspective within health care settings to provide truly child-centred care. *Journal of Child Health Care*, 15(2) p.99–106.
- The Hillingdon Hospitals NHS Foundation Trust (2013) Privacy & Dignity: A leaflet for paediatric patients. Online. Available: [http://www.thh.nhs.uk/documents/\\_Patients/PatientLeaflets/paediatrics/PIID145-PrivacyDignity\\_Paeds\\_Jun13.pdf](http://www.thh.nhs.uk/documents/_Patients/PatientLeaflets/paediatrics/PIID145-PrivacyDignity_Paeds_Jun13.pdf) Accessed: 2 March 2015.
- The Leeds Teaching Hospital Trust (2015) Welcome to Leeds Children's Hospital. Online. <http://www.leedsth.nhs.uk/patients-visitors/our-hospitals/leeds-childrens-hospital/> Accessed: 18 January 2015.
- The Society and College of Radiographers (2015a) Children. Online. <https://www.sor.org/practice/hot-topics/children> Accessed: 18 January 2015.
- The Society and College of Radiographers (2015b) Children: Waiting and changing room facilities for children. Online. <https://www.sor.org/practice/hot-topics/children> Accessed: 18 January 2015.
- Thompson, C. (2015) 3D equipment helps ease suffering of young patients at Great North Children's Hospital. *ChronicalLive*, 1 February 2015, Online. Available: <http://www.chroniclalive.co.uk/> Accessed: 21 February 2015.
- Tonkin, A. (2014) The provision of play in health service delivery: Fulfilling children's rights under Article 31 of the United Nations Convention on the Rights of the Child. National Association of Health Play Specialists.
- Tonkin, A. (2014) Using play in diverse healthcare settings. In: Tonkin, A. (ed.) *Play in Healthcare: Using play to promote child development and well-being*. Oxon: Routledge, p.191–207.
- Tonkin, A. and Etchells, J. (2014) Promoting health and well-being. In: Tonkin, A. (ed.) *Play in Healthcare: Using play to promote child development and well-being*. Oxon: Routledge, p.110–125.
- Tonkin, A. and O'Donnell, I. (2014) Leading the promotion of play and recreation. In: Tonkin, A. (ed.) *Play in Healthcare: Using play to promote child development and well-being*. Oxon: Routledge, p.174–190.
- Tonkin, A. (2007) Building a Schema for Health Promotion among pre-school children. Unpublished PhD thesis, University of Hertfordshire.
- Ulrich, R. Quan, X. Zimring, C. Joseph, A. and Choudhary, R. (2004) The Role of the Physical Environment in the Hospital of the 21st Century: A Once-in-a-Lifetime Opportunity. The Center for Health Design.
- Unicef (2014) Unicef photography: 25 landmarks for children. Online. [http://www.unicef.org/photography/photo\\_crc25.php](http://www.unicef.org/photography/photo_crc25.php) Accessed: 18 January 2015.
- Unicef (2008) Rights for every child. Online. Available: <http://www.unicef.org/rightsite/files/rightsforeverychild.pdf> Accessed: 10 February 2015.
- University Hospitals Bristol (2014) Improvements enclosure. Online. [http://www.uhbrisolt.nhs.uk/media/2118553/bch\\_improvements\\_enclosure\\_mar14\\_final.pdf](http://www.uhbrisolt.nhs.uk/media/2118553/bch_improvements_enclosure_mar14_final.pdf) Accessed: 18 January 2015.
- University Hospitals Bristol NHS Foundation Trust (2012) Our charities and fundraising. Online. <http://www.uhbrisolt.nhs.uk/about-us/our-charities-and-fundraising/> Accessed: 18 January 2015.
- University of Nottingham (n.d.) Manuscripts and Special Collections: Nottingham Children's Hospital. Online. Available: <http://www.nottingham.ac.uk/ManuscriptsandSpecialCollections/CollectionsInDepth/Health/NottinghamChildrensHospital.aspx> Accessed: 14 February 2015.
- University of Sheffield School of Architecture (2007) R&D Project B(04)03: Disseminating good practice (DGP): Developing an exemplar layer for AEDET Evolution and ASPECT design evaluation tools. Department of Health.
- van der Riet, P., Jitsacorn, C., Junlapeeyaa, P., Dedkhard, S. and Thursby, P. (2014) Nurses' stories of a 'Fairy Garden' healing haven for sick children. *Journal of Clinical Nursing*, 23, p.3544–3554.
- van Staa, A., Jedeloo, S., Van der Stege, H. and On Your Own Feet research group (2011) "What we want": chronically ill adolescents' preferences and priorities for improving health care. *Patient Preference and Adherence*, 5 p.291–305.
- van Slyke, T. (2003) Digital Natives, Digital Immigrants: Some Thoughts from the Generation Gap. Online. Available: [http://technologysource.org/article/digital\\_natives\\_digital\\_immigrants/](http://technologysource.org/article/digital_natives_digital_immigrants/) Accessed: 25 February 2015.
- Viner, R. (2007) Do Adolescent Inpatient Wards Make a Difference? Findings from a National Young Patient Survey. *Pediatrics*, 120 (4) p.749–755.
- Walker, J. (2006) *Play for Health: Delivering and Auditing Quality in Hospital Play Services*. London: National Association of Hospital Play Staff.
- Webster, R. (2014) It's a Wonderful Life. Rob Webster. 22 December 2014. Online. Available: <http://nhsrobwebster.com/2014/12/22/its-a-wonderful-life/> Accessed: 1 March 2015.
- Welly, A., Lang, H., Welly, D. and Kropp, P. (2012) Impact of dental atmosphere and behaviour of the dentist on children's cooperation. *Applied psychophysiology and biofeedback*, 37 (3) p.195–204.
- Weil, L. (2013) The voices of children and young people. In: Annual Report of the Chief Medical Officer 2012, Our Children Deserve Better: Prevention Pays. Department of Health, Chapter 4 p.1–20.

## Acknowledgements

Firstly, thank you to Kath Evans and NHS England for providing the opportunity and funding to enable this piece of work to be undertaken. Additional thanks to Kath for all her support and encouragement, especially all the tweets.

Whilst undertaking this review of the literature (which has morphed into such a large and very diverse project) the willingness of people to generously provide support, guidance and their time has been immense. Everyone who was approached has contributed and been really helpful. It seems inadequate just to list you all, but rest assured, I am extremely grateful to you all for your valuable contributions.

**Aaren Adamson** – Birmingham Children’s Hospital  
**Peter Barron** – Author  
**Jayne Binstead** – Experia  
**Sam Boex** – Boex  
**Ollie Berman** – Office of the Children’s Commissioner  
**Lucy Dinnen** – Architect  
**Andrea Duggan** – Alder Hey Children’s NHS Foundation Trust  
**Jenni Etchells and bb**  
**Kath Evans** – NHS England  
**Rachel Fitzpatrick** – Chelsea and Westminster Hospital  
**Sally Gunnell** – Stanmore College  
**Sharon Honey** – Stanmore College  
**Hannah Lashite** – Stanmore College  
**Pat Lozarou** – The Balcombe Dental Practice  
**Will McCready** – Great Ormond Street Hospital for Children

**Isobel Manning** – GO Create! Great Ormond Street Hospital for Children  
**Mashal Miller** – Stanmore College  
**Urmila Rasan** – Stanmore College  
**Penny Robbins** – ArtCare, Salisbury District Hospital  
**Helen Sadler and Monkey** – Monkey Well-being  
**Angela Shaw** – Hopscotch and Practical Pre-School Books  
**Senior Management Team** – Stanmore College  
**Sam Stokoe** – Newman Gauge Interior Design  
**Suzanne Storer** – Healthcare Play Specialist Education Trust  
**Debbie Tonkin** – proof reading  
**Kally Trahearn** – NHS Improving Quality  
**Joanne Trussler** – Great Ormond Street Hospital for Children  
**Claire Weldon** – Stanmore College  
**Jeremy Weldon** – Northwick Park Hospital  
**Steph Williamson** – Great Ormond Street Hospital  
**George Vasilopoulos** – Chelsea and Westminster Hospital  
**Keren Wells** – Rhino UK  
**The Art students** from Stanmore College  
**Practice on the Green** – Dental Practice

## A final thought...

The following message was received from Sam Stokoe, Director of Newman Gauge Interior Design following a request for advice about a project that had been undertaken in Birmingham... it sums up the literature very concisely...

The key points for us is understanding the end user who in this case is children. Everything important should be at their eye level, children (in fact anyone) confined to hospital crave views to the outside so low level windows (even if the outlook is a road) is really important. We also try to introduce features on the ceilings for bed bound patients.

Most children, even if they are very poorly want to be out of bed and playing, all staff encourage this as it helps the recovery process so space for play is crucial... It is also important for bored siblings.

Regarding the budget you need to spend the money where it will be appreciated the most –and budgets in the NHS are usually very low. This does not mean the space has to be white and grey and all lighting regular fluorescents.

Wall protection , paint and vinyl floor comes in a variety of colours you just need to be creative how you use it. Finally lighting is essential and how it is installed or arranged can transform a boring corridor into an exciting journey through space – simply using different lengths of light fittings or arranging them at 'jaunty' angles breaks up the monotony of repetitive pools of light.

That is a very brief summary but I hope this helps...

© The Healthcare Play Specialist Education Trust  
<http://www.hpset.org.uk/>

