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Design 4 health

Chamberlain, Mawson, Wolstenholme

"Service design in chronic health"

Abstract:

Introduction

Every day we interact with services. From checking our mobile phone to taking the bus to work, from ordering shopping online to taking money out of the ATM. Most if not all of these services will have been designed, and we have a sense of which of these services are good or bad, and we can change providers based on this experience.

Now consider health. The majority of the UK's health provision is delivered as a service; in fact, the clue is in the title. The National Health Service (NHS) is the biggest provider of healthcare in the world. In 2014 the NHS employed 150,273 doctors, 377,191 qualified nursing staff, 155,960 qualified scientific, therapeutic and technical staff and 37,078 managers. It comprises 156 acute trusts, it's planned expenditure for 2014/15 is £113.035bn and the NHS deals with over 1 million patients every 36 hours.

Service design is an emergent discipline of design and as such, to date, has had little to do with the development of services in health. This chapter is going to reflect on the challenges changing societal needs will have on the way that health care is provided, and how by applying the theory, methods and practice of participatory service design, health services are able to respond and deliver services that 'work' for both patients, carers and health service providers.

The chapter will set out a key challenge to today and tomorrow's healthcare provision, in that the key resource to engage is now those individuals living with chronic conditions. Service design has particular strengths in involving a diverse range of stakeholders to co-design solutions that work for all.

Why health:

A paradigm shift to self-management in chronic health.

Self-management programmes are being used worldwide to redesign health systems to be more responsive to the challenges, and associated economic concerns, imposed by an ageing population and the associated increased prevalence of chronic disease. The

World Health Organisation (WHO) developed the Innovative Care for Chronic Conditions framework based on the original Chronic Care Model (1). The framework is focused on a triad partnership between the individual, the healthcare team and the community. The evolving notion of patients' engagement in managing their chronic illness is stressed in this framework. Strategies for engagement include health literacy, shared decision-making and self-management (2). Providing the scale and adequacy of services to support self-management of long-term conditions requires radical new thinking about how public health services are organised and delivered including how technologies can be integrated into healthcare systems to promote and support self-management.

A starting point for such thinking is the concept of co-production of health outcomes. To enable self-management, the person with the chronic illness, physician and health professional need to work together within a participatory network of relatives, friends, and service organisations. One radical model of healthcare delivery that builds on co-production is Open Health (3). The model characterises people as active participants in their own healthcare, who draw on information from relatives, friends, and from health services; thereby changing from being a passive recipient to an active driver. For example, it is postulated that 'expert patients' can provide practical advice for dealing with everyday issues, borne out of their experiences of living with the illness on a day-to-day basis, that a clinician might not be aware of (4).

Why Design:

A pragmatic and moral imperative.

The designer's role has traditionally been shaped through commissions from industry to respond to a brief formulated by the client to improve or create new products to maximise their market share and profit margin. Designers utilise and apply their aesthetic and technological skills to optimise manufacture and performance of the product and to enhance economic viability and consumer appeal. This has been a familiar model in the design of medical devices and health related products. These products when launched into the market place are very often part of a service and become the touchpoints where service providers and recipients interact. These service encounters become a critical part of the customer experience and consequently consideration to the role of the service interaction through the product is an important factor for the designer and manufacturer. Unfortunately too often service encounters are not the experience we would wish for and this is largely due to the fact that

products, the touchpoints, are designed and developed in isolation of the service. Conversely services are designed without full consideration of the users interaction with these services through the touchpoints. 'As Manzini (2011) similarly argues, talking of designing for services rather than designing services recognizes that what is being designed is not an end result, but rather a platform for action with which diverse actors will engage over time'. (Kimbell, 2011).

So service design can be seen as a process of planning and organising all the elements of a service, including the interfaces, to optimise the customer experience, with co-design between designers, manufacturers, service providers and end the service users playing a central role. The benefits of co-design are argued to occur;

- through improving the creative process and organisation of the service project.
- for the service's customers by a better match between offer and needs.
- in the supplier through creativity, awareness of customers and internal cooperation on innovation. (Steen et al 2011)

The traditional role of design and the designer has evolved. Sanders (2003) discussed how we were witnessing a shift in focus from individual to 'collective creativity' that provided a new role for designers as creators of scaffolds or infrastructures upon which non-designers could express their creativity. Chamberlain (2012) has described how designed objects, we might describe as critical artefacts, do not necessarily present solutions but considered questions and prompts for conversation to develop understanding. Rather than conceptualising design as a problem solving activity used at the end of the development process to embellish a product he has frequently employed design through the creation of objects to promote discussion and to aid communication amongst stakeholders. Critical artefacts and prototypes can become key in understanding and defining user needs accessing their tacit knowledge through 'doing' rather than rather than relying on verbal protocols. This can help break down barriers of language, culture, age and gender. Design skills can be employed to make tangible dreams, test future scenarios and can facilitate the engagement of people as active partners in research and design activity rather than passive respondents.

With an increasing shift to self managed health programmes as part of health services it seems creators of services have a moral obligation to engage users of these programmes and services at the heart of their developments. From a pragmatic perspective it could

also be suggested that by engaging users throughout the design process the outcome will be fit for purpose and potentially more valued by those using the service.

How:

We will illustrate this through 2 projects namely, a stroke survivor case studies reflecting how design has engaged and involved users in developing their own self managed care and a service improvement case study where users were involved in developing the very services required to deliver.

Intelligent Shoes for stroke survivors.

The UK National clinical guidelines for stroke (RCP, 2012) provide evidence and recommendations for the commissioning and delivery of services for individual stroke survivors and their families. The guidelines cover the acute phase of management, secondary prevention, the recovery phase and rehabilitation followed by the long-term management after the stroke. Whilst there is significant evidence to support rehabilitation post discharge, delivered by Early Supported Discharge teams (ESD) and Community Rehabilitation Teams (CRTs) due to increasing demand on services and financial constraints within health and social care, service needs cannot be met. A resent national audit of stroke services (SSNAP, 2015) reported evidence of wide spread variations in the nationally commissioned portfolio of post stroke services with ' too many areas failing to commission comprehensive care'.

With this increasing demand on services, financial constraints and an overwhelming amount of evidence for change, this project responded by proposing a radical innovation with the adoption of a self-management paradigm as a way of delivering home-based rehabilitation thereby re-positioning the patient and carer as central to both the design and delivery of their own care.

We wished to deepen our understanding of the potential for digital technology to support the self-management of stroke rehabilitation, through an iterative health, social care and user centered design methodology (Wright and McCarthy. 2010). We designed a Personalised Self-management Rehabilitation System (PSMrS), a prototype integrated with sensor technology, developed to enable stroke survivors to self-manage their rehabilitation with motivational feedback enabling them to achieve identified individualised life goals. The PSMrS consists of a 'Home hub', a Smart phone or PC, a server and an intelligent sensored insole. The initial concept being that the system could provide feedback to the stroke survivor

their carers and the clinical multi-disciplinary team within community rehabilitation centres. See figure 1.

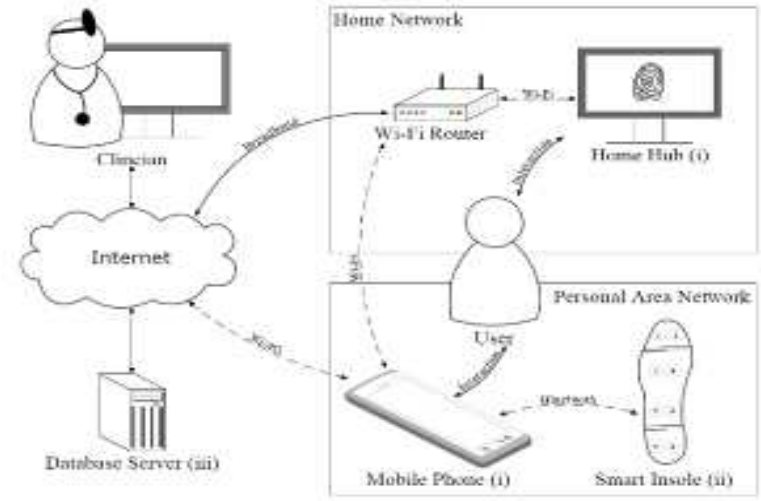


Figure 1.

As described, the current care pathway for stroke involves acute care followed by discharge to a ESD teams or community rehabilitation teams who provide rehabilitation either in the home environment or day care centres for a maximum of 12 weeks. Following discharge from the service the stroke survivor has no input from therapists, relying on their prior learning and practice of exercise or private therapy if available. It was envisioned that the PSMrS when designed and developed would fill the gap in stroke provision enabling the survivor to self-manage the rehabilitation with feedback on their walking ability from the intelligent shoe after discharge from the health service.

A key component of rehabilitation is relearning how to balance and walk, keeping weight evenly distributed between both feet and placing the heel first when the foot strikes the ground in stepping. The multi sensored insole worn daily provided feedback on both gait parameters through the 'Home hub' feedback screens enabling the stroke survivor to visualise their recovery and link that to their exercise programme also included within the 'home hub'. See figures 2 and 3

Figure 2.

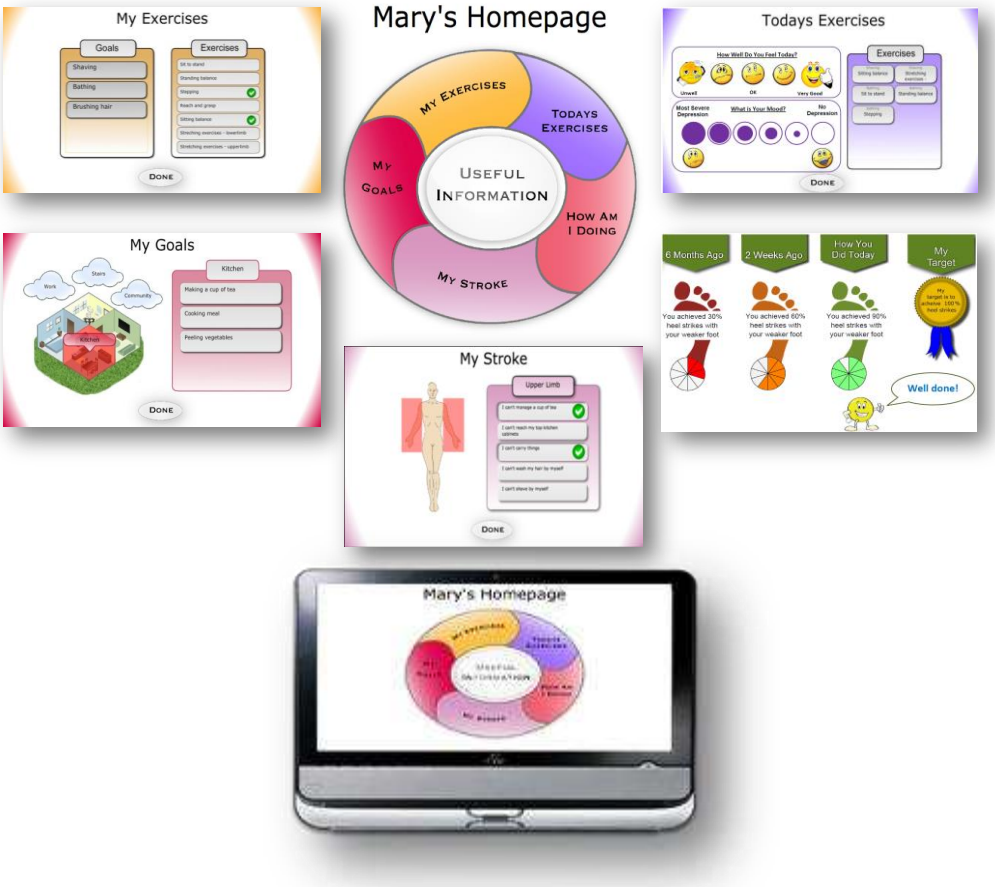


Figure 3

The design and development of the PSMrS involved a complex user centred, participatory process which aimed to:

1. Translate current models of stroke rehabilitation into a technology based system.
2. Design a system that integrated 'life' goals that reflected the needs of the individual stroke survivor.

3. Explore whether a technology solution that recorded walking ability could be integrated into a personalized system to provide motivational feedback on the attainment of key walking characteristics.
4. Design motivational feedback screens that could translate complex biomechanical data into simple conceptual images.

We undertook a series of home visits, focus groups, in-depth interviews, cultural probes (Gaver, et al. 1999) and technology biographies (Blythe, et al. 2002) together with cooperative evaluations during the iterative design process. This user or user-centred approach to design was utilised as a holistic approach in order to understanding firstly, the users experience of technology and secondly to ensure that we had a meaningful engagement with the users in co-designing the technology.

Our first focus group was conducted with seven stroke professionals and the second focus group was conducted with seven people with stroke and their carers. Participants feelings and attitudes towards assistive and information communication technologies were explored by using 'post-its' activities and envisioning cards.

During the home visits eight participants were given three activities: cultural probes, technology biographies and in-depth interviews. The cultural probes provided us with valuable information that enriched the data derived from interviews with the participants. The nonverbal data were particularly useful in participants who provided less detailed descriptions of their experiences with stroke and technology. We used probes kit (package) containing a newspaper, a TV magazine and a diary to enable the observation of participants' interests and concerns over a period of time within their personal and social context or life setting. We were particularly interested in finding out about relationships and shared experiences and, hence, themes such as "my family and friends", "description of an imaginary therapeutic exercise", "description of four gifts", "description of an ideal dream-day", "use of a media diary" and "a few words about me" were included in the kit which subsequently helped us identify user requirements for the developing PSMrS. Stroke survivor and carer dyads were used to create technology biographies in which participants' views, feelings, thoughts and hopes towards technology were explored. The outcome of the technology biographies were merged with the data obtained from the in-depth interviews and cultural probes to examine participants' experiences as whole

The technology biography interviews were also undertaken to examine the use of technology in the participants' homes, to explore the personal history of technologies, cultural meaning and the changes that the participants witnessed during their life time, and to investigate future technological developments and participants' feelings related to these technological advancement (Mawson et al., 2014).

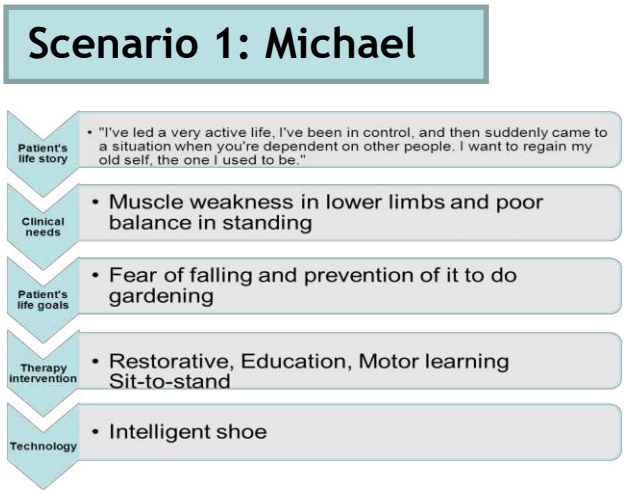
We also conducted narrative interviews with the aim of inducing narrative responses (Wengraf 2001) as we took the participants back to their experience of stroke and how and what things happened since the incident of stroke. The narratives allowed users to express their experiences of stroke and their views on acceptable technologies and desirable design solutions, allowing users as partners in co-design to give a voice to often personal, social and professional aspects of their lives.

The participants were encouraged to use their free imaginations to express their ideas about technological solutions for the rehabilitation of stroke by completing the envisioning cards. They supported the idea of a technology to monitor patients between therapy sessions and the idea of integrating patient information in a sharable system. They believed that technology has the potential to augment therapy carry over and to maintain therapy outcomes but had their reservations about the idea of hands-on therapy being replaced by rehabilitation technology. They stressed the significance of meaningful, context-dependent and personalised technology that could be used to redesign and improve rehabilitation services (Mawson et al., 2014, 2015).

In order to understand how to build a system that mirrored, in a virtual sense, the care pathway and model of rehabilitation current in the UK, we used our qualitative data from clinicians and literature reviews to design a conceptual matrix of the PSMrS, (Nasir, Mawson Wright et al, 2009). The matrix, Figure 1, was linked to a series of personalised scenarios, Figure 2 which were also developed from the focus groups, in-depth interviews, and cultural probes, together they provided a communication tool within the inter disciplinary research team. This gave the team a concrete and tangible representation of both the rehabilitation process, the individualised needs of the stroke survivor and the theories of recovery and behaviour change in order to facilitate the co-design of the self-management stroke technology.

Figure 1 The conceptual matrix for a stroke self-managed rehabilitation system.

Figure 2: Example of a Stroke survivors 'scenario'.



The conceptual matrix was translated into a number of modules within the system each having an interactive screen accessed by touch from the 'home hub'. The screens were designed and tested with stroke survivors', carers and the MDT as it was envisioned that the system would be integrated into the stroke care pathway during the final weeks of community rehabilitation. This would allow the customisation and personalisation of the system for each stroke patient. The following modules with interactive screens were designed to mirror the rehabilitation model reflected in the conceptual matrix: 'My stroke', My Goals', 'My Exercises', 'Todays Exercises', 'How am I doing'.

A number of prototype screen shoots were designed; the most complex of the screens being the feedback screens that provided the stroke survivor with information (knowledge) about their walking symmetry and heels strike. The reason why these two parameters of gait were chosen was the evidence-based link between poor symmetry of gait and the risk of falling, and the cosmetic improvements in gait when a stroke survivor walks more normally, striking the heel in a forward step. As the intelligent insole (shoe) had been chosen from a technology review as the most appropriate measure of walking characteristics, a screen was required that translated the complex sensor data from the insole to the stroke user in both a meaningful way and a way that would promote self-efficacy and motor behaviour change.

Research suggests that in order to achieve rehabilitation outcomes through the use of digital technology, key elements of feedback such as; accurate, measurable, rewarding, adaptable, and the users knowledge of results feedback are required to trigger the mechanisms underpinning self-management and behaviour change (Parker *et al,* 2012). Therefore, these elements were incorporated into the feedback screens each of which being paper prototyped. These were evaluated with stroke survivors and their carers using the participatory method of cooperative evaluation and cognitive walkthroughs. Figure 5 illustrates the preferred feedback screen shot alongside the traditional, more technical feedback screen.

Figure 5:Traditional feedback screen and the feedback screen designed with users.

Following the initial evaluation, the prototypes were evaluated further with 9 stroke survivors and their carers in their own homes. Using a cooperative evaluation (Monk, et al. 1993), users were encouraged to think aloud while using the PSMrS system. Users' interactions with the system were audio/video recorded upon permission. The aim was

to examine how easy or difficult the system was to use, what challenges it posed, how any problems might be improved, and to establish which parts of the system were poorly designed and hence difficult to operate.

A task sheet was prepared and participants were asked to think-out-loud as they performed each task by telling the researchers what they thought and how they were going to solve each task. For example, which button they thought might be appropriate and why and how the system responded to their activities and gave them feedback.

We explored different ways of providing post stroke rehabilitation within a stroke care pathway and how they might be translated into an ICT based system underpinned by theories of motor relearning, self-management and behaviour change. The design methodologies used in this project have ensured that the interactive technology developed has been driven by the needs of the stroke survivor and their carers in the context of their journey to recovery or adaptation. The participatory and user centred nature of this work has resulted in a personalised system for self managed rehabilitation which has the potential to change motor behaviour and promote the achievement of life goals for stroke survivors.

From a pragmatic perspective we have placed the 'person' at the centre of the design and development process, from a moral perspective we have shifted the responsibility of care from the service provider to the stroke survivor and their carer. In doing so we have responded to the unmet need for long-term stroke rehabilitation and the societal challenges we current face within health and social care.

Better Outpatient Services for Older People (BOSOP)

Most people's first interaction with hospital services is through the outpatient department. Unless it is an accident or an emergency when you see your general practitioner/ primary care physician if you need specialist care you will be referred to the outpatient service.

From the data we know that in the time period 2008-2009 nearly 20 million people over the age of 60 attended an outpatient clinic in England and yet the research also shows that outpatients areas have fallen behind the technical and service innovations of inpatient areas.

Project Aims

The primary aim of the project was to improve the experience of older people with complex needs who use outpatient services. We anticipated the following outcomes subject to the priorities and improvements identified by service users and staff:

1. Improved quality of outpatient services for older people in terms of a more personalised, responsive and dignified experience;
2. Better access and support for older people using outpatient services;
3. A better understanding of what matters to older people which can be used to improve and measure the quality of services;
4. Training material in outpatient skills based upon patients as experts.

We anticipated that this would result in two main benefits: firstly, older people would receive the particular care and support they need through the outpatient system; and secondly, older people would gain greater health and wellbeing benefits from a service that is more responsive to their needs. The project would therefore directly address a number of criteria in the 'Dignity Challenge' the most important of which are:

- *Treat each person as an individual by offering a personalised service*
- *Enable people to maintain the maximum possible level of independence, choice and control*
- *Listen and support people to express their needs and wants*
- *Assist people to maintain confidence and a positive self-esteem*

In order to measure the impact of the project against these criteria we used a triangulated method of three outcomes (1) the improved experience of older people with complex needs through interviews, (2) the implementation of changes in outpatients' services through audit with standards set by the design groups, and (3) the reduction in rates of DNAs, cancellations and complaints from routine data collection.

The basic approach of the project was to use service design in the context of healthcare to achieve service improvements. The project focused on the points at which people come into contact and interact with medical outpatient services at the Royal Hallamshire Hospital. These 'touchpoints' shape the experience users have of the service and influence the way they access and use these services. We therefore followed the

methods of *Experience Based Design* (EBD) developed by the NHS Institute for Innovation and Improvement[1].

The methods of EBD are well referenced and described elsewhere Wolstenholme et al 2013, Bowen et al, Bate and Robert etc
In a nutshell the methods involve a participatory approach where staff, patients and carers are brought together to capture, and understand the experience of using the current service, they then co-design aspects of new services and evaluate the changes.

A key aspect of this method is the capturing of experience in the form of emotion maps, which are a powerful way of representing this process. Below is an excerpt from the patients' experience map which shows significant interactions on their journey and associated emotions.

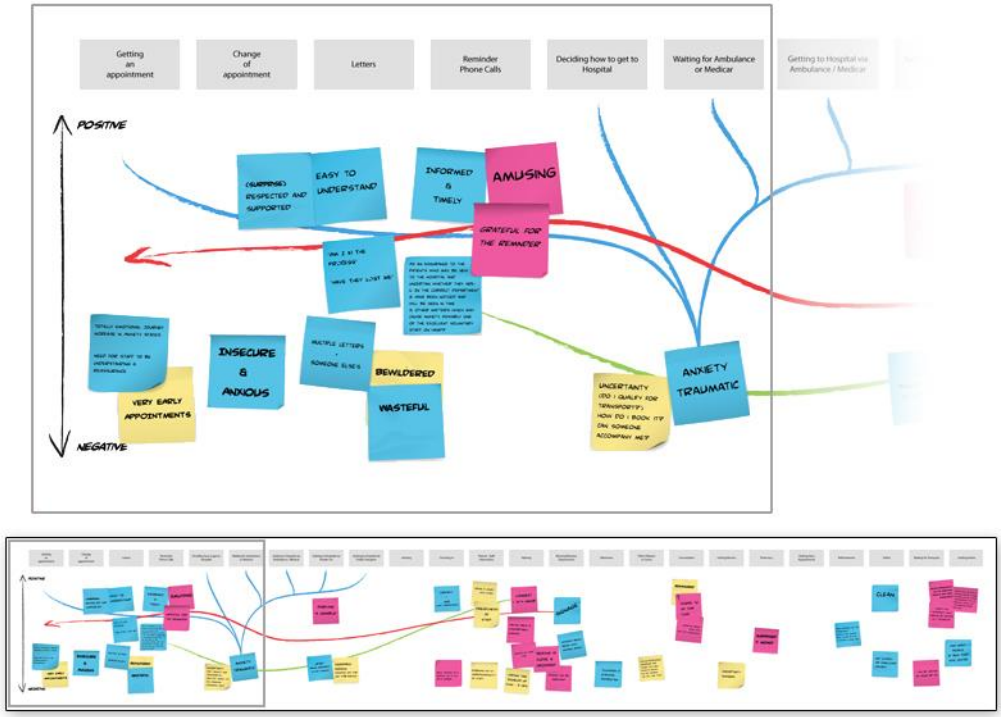


Figure 1: Excerpt from the Patient Experience Map

Patient Engagement

The methods used in the project depend upon the involvement of patients and their carers as expert users of outpatients. However, because the focus of this project was

[1] For more information on EBD please see
http://www.institute.nhs.uk/quality_and_value/introduction/experience_based_design.html

older people and their complex needs we needed to go beyond conventional approaches to patient involvement to secure the insights from 'less heard' groups and so worked with a local voluntary organisation (SCCCC[2]) to involve patients through a community outreach model.

Working with SCCCC gave us access to individuals with mobility and access issues. Interviewing these people in their homes we were able to gather a wider range of the experiences and represent these in the group work. A further benefit of this approach was that these service users had an existing relationship with SCCCC and so felt comfortable and supported to contribute meaningfully to the *Experience Based Design* Approach.

'Staff' engagement

Experience Based Design recognises that it is not just patients who experience a service. Staff inclusion is crucial in terms of their experience and understanding of the clinical and service requirements. We therefore worked to gather all the key stakeholders' experiences including Clerical, Nursing and Medical staff, and the Yorkshire Ambulance Service. This core group then expanded as the complexity of the project became apparent to include Sheffield City Council, Sheffield Hallam University and senior managers from across the Trust.

Figure 2: Participants at an Experience Gathering event

Staff engagement not only allowed us to ground any proposed changes in the reality of the work place, but also allowed a deeper understanding from both staff and patients of each *others* experience.

[2] http://www.scccc.co.uk

Patient Experience

We provided training to SCCCC staff to enable them to gather evidence from service users. We did this by asking patients to tell the story of their last visit to Outpatients. These stories allowed people to move past the 'mustn't grumble' and 'don't want to complain' and describe the interactions of the patient journey with a degree of objectivity. For example, the story provided by one of the older patient representatives highlights a lot of issues:

> *When you're going to hospital the anxiety starts a long time before. When you get your appointment you begin to get anxious: what's going to happen, what are they going to do to me? Dealing with patients is a very difficult, time-consuming, and emotional responsibility. All the relationships between staff and patients are caught up in this anxiety. Particularly for older people who aren't as able as they used to be to cope with difficult situations: where am I, what am I doing here, have they forgotten me, am I in the right place, am I going to get to my appointment in time? This project is beginning to unpick what I call the leviathan of the hospital which is so vast, and so big.*

Figure 3: The Royal Hallamshire Hospital

This illustrates the power of stories here in that:

> Stories need not only be about experiences we have had. They might be about experiences we would like to have, or we plan to have. Imagined stories of possible futures or alternative presents are the basis of our imaginative engagement with the world. Imagining alternative presents or possible futures is of course central to design thinking and is thus of great importance to us here.[3]

We were also able to create new experiences for staff and patients to provide other insights into the service. We utilised 'secret shoppers'. A patient and SCCCC staff member made the journey from the centre of Sheffield to the Outpatients department by public transport attended a 'virtual' appointment and went on to X-Ray, ECG and Pharmacy. They told the story of this, which provided powerful evidence to stimulate design thinking.

Staff Experience

We interviewed staff to understand the reality of working in Medical Outpatients, and at every opportunity sought to return to the staff and their experience, knowledge and expertise to validate the work we were undertaking. We had excellent support from individuals who championed BOSOP in and out of the project environment.

Co-Design

The second key component of the approach is co-design. Groups of patients, carers, staff and the wider project team were established around themes (Getting to the hospital, arriving at the department), derived from the experience capture sessions. Techniques of service design and design research (blue sky thinking, modelling, critical artefacts) were used to allow the groups to come up with ideas, develop prototypes and propose ways to test. The groups could request external 'experts' where technical or specialist advice was required to move their ideas forward, but some of the most powerful solutions were developed within the groups over a period of weeks. A range of the proposals are outlined below.

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3 Experience-Centered Design: Designers, Users, and Communities in Dialogue Peter Wright, John McCarthy Synthesis Lectures on Human-Centered Informatics, 2010, Vol. 3, No. 1, Pages 1-123

'Customer Care' and interactions with patients

Many patients praised the staff of Medical Outpatients for their professionalism and understanding, but within the co-design phase of the project we discussed good examples of customer care from different services. To stimulate thinking we started with the idea of a hotel where there is a warm welcome. This experience was recognised as being positive within the group however the patients emphasised the significant differences between attending a clinic and staying at a hotel so went on to describe a much more emotionally responsive and caring response required. Consequently whilst the existing Trust customer care e-learning package is a good start it is not adequate to enable staff to understand and respond more fully to the situation being experienced by many patients. In keeping with the participatory nature of the project we felt that applied theatre would offer a different and memorable insight into the roles of staff and patients in this complex process.

> *Frequently staff may underestimate the importance of what they do saying, "I only deal with appointments" and need to have their crucial role emphasised. Innovative training to challenge existing practice delivered via interactive drama using organisations like the Dead Earnest Theatre Group*[4]

'Dead Earnest'[5] are a Sheffield based applied theatre company who specialise in using *"creative theatre techniques to enhance the ways people act and interact - professionally & personally."* Their creative director worked with the design team and the staff and patient experience to develop a script that foregrounded the aspects of interpersonal interaction identified in the experience capture aspect of the project. This was performed to an audience of staff patients and carers and allowed a connection with the

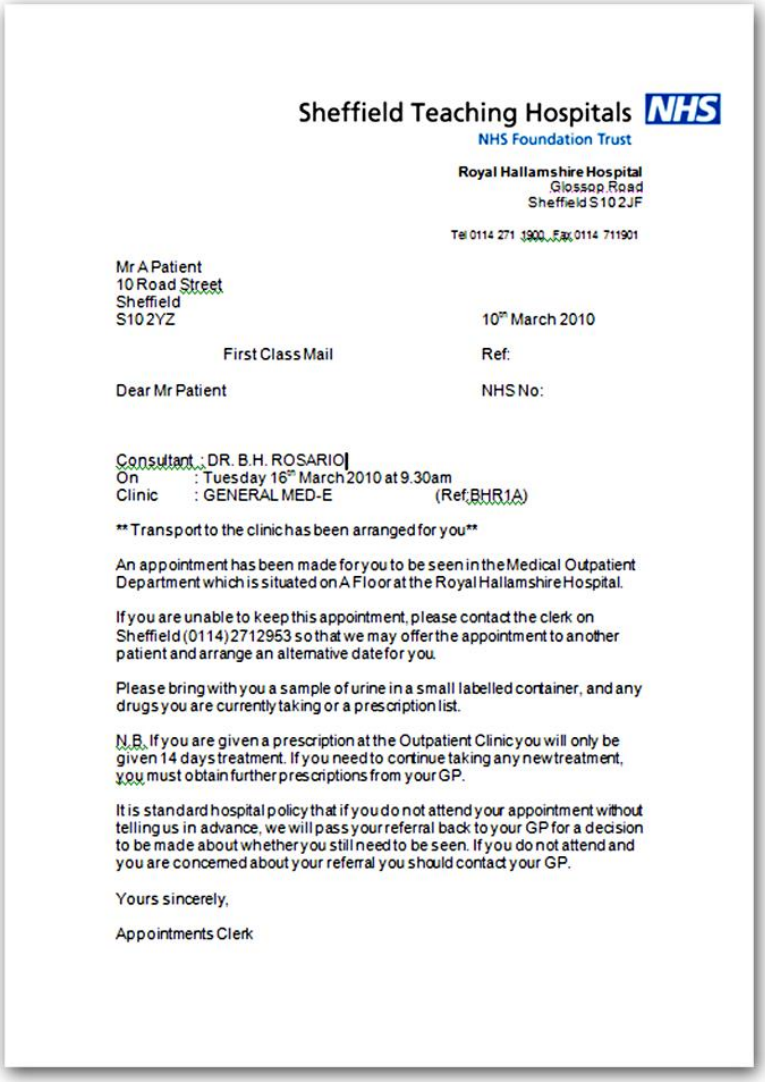
Appointment Letters

The experience mapping highlighted that the anxiety for patients often starts with the receipt of the appointment letter. The original appointment letter was described as impersonal, and potentially confusing. Staff and patients went away and wrote the

[4] Professor Ann Macaskill, SHU Health Psychology, CLAHRC: Better Outpatient Services for Older People: Perspectives Informed by Health Psychology of Patients and Staff Experiences of Medical Outpatients at the Hallamshire Hospital, Sheffield

[5] http://www.deadearnest.co.uk/

letter, from their perspective, that they would like to receive, and then brought their work back to the group to produce the second letter.



Sheffield Teaching Hospitals NHS
NHS Foundation Trust

Royal Hallamshire Hospital
Glossop Road
Sheffield S10 2JF

Tel 0114 271 1900 Fax 0114 711901

Mr A Patient
10 Road Street
Sheffield
S10 2YZ

10th March 2010

First Class Mail

Ref:

Dear Mr Patient

NHS No:

Consultant : DR. B.H. ROSARIO
On : Tuesday 16th March 2010 at 9.30am
Clinic : GENERAL MED-E (Ref:BHR1A)

** Transport to the clinic has been arranged for you**

An appointment has been made for you to be seen in the Medical Outpatient Department which is situated on A Floor at the Royal Hallamshire Hospital.

If you are unable to keep this appointment, please contact the clerk on Sheffield (0114) 2712953 so that we may offer the appointment to another patient and arrange an alternative date for you.

Please bring with you a sample of urine in a small labelled container, and any drugs you are currently taking or a prescription list.

N.B. If you are given a prescription at the Outpatient Clinic you will only be given 14 days treatment. If you need to continue taking any new treatment, you must obtain further prescriptions from your GP.

It is standard hospital policy that if you do not attend your appointment without telling us in advance, we will pass your referral back to your GP for a decision to be made about whether you still need to be seen. If you do not attend and you are concerned about your referral you should contact your GP.

Yours sincerely,

Appointments Clerk

Figure 5: Original Appointment Letter

Changes were the introduction of a picture of the correct door to use for the clinic, the key information being in bold and the personalisation of the letter so it was addressed from the appointment clerk responsible for the clinic.

This was co-design in action resulting in a letter that reflected the best of patient and staff experience.

Sheffield Teaching Hospitals NHS
NHS Foundation Trust

Medical Outpatients
Glossop Road
Sheffield
S10 2JF

0114 271 2953

Mr P Atient
101 Nice road
Sheffield
S12 357

Dear Mr Atient

Patient Number DW1452

Welcome to Medical Outpatients, we have arranged the following appointment for you.

Consultant: **Dr A Anderson**
Date: **Wednesday 13 November**
Time: **4.30pm**
Where: **Medical Outpatients (A Road)**
Royal Hallamshire Hospital
Transport: **An ambulance will arrive for you and your escort between 12 noon and 2.00pm**

As this is your first visit to clinic you will need to bring:

- A sample of urine in a small labelled pot
- A list of medications and their doses (your prescription list)

Please allow a full morning or afternoon for your visit. After meeting with the doctor you **may** need to have an ECG, Blood tests or an X-Ray. The doctor will tell you if this is necessary during your appointment.

Please contact us as soon as possible if you are unable to attend your appointment as this will allow us to offer the appointment to someone else. We can be contacted on the number at the top of this letter between 8.00am and 5.00pm Monday to Friday. You can also use this number to contact us if you have queries regarding your transport arrangements.

We look forward to seeing you at your appointment

Yours sincerely

Darren Woodward,
Appointments Clerk

****Please bring this letter with you to your appointment****

Chairman: David Stone OBE • Chief Executive: Andrew Cash OBE

Figure 6: New Appointment Letter

This letter has been piloted in MOP and is currently being sent out to all new patients over the age of 65. It will be our recommendation that the letter is adopted by the Trust for use on appropriate clinics.

Environment and Facilities

'Am I in the system?' was a concern echoed throughout many of the project groups. In some ways this was an expression of the general anxiety of attending outpatients for a potentially life changing diagnosis to be delivered, but there was a more specific anxiety about the process of waiting for the consultation. To better explore the former point, the project team commissioned a health psychologist from Sheffield Hallam University

to undertake a review of the psychological implications, and environmental factors that might influence these.

> The over-arching aim should be to minimise any additional stress associated with visits to outpatients. If outpatient visits are experienced as distressing then it will increase the likelihood of missed appointments particularly with individuals who are having difficulty coping. [6]

Patients described not knowing if they were in the right place, if they had been missed and overlooked. Consequently this effected behaviour in the waiting areas. The figure below is the main waiting area on the MOP corridor. Anecdotally, this was rarely used outside of the occasions when there was nowhere else to sit.

Figure 8: Waiting area in Medical Outpatients

When you sit in this area you have no connection to the corridor and the feeling is that you are out of the way and almost unseen. A practical solution was to install convex mirrors on the corridor wall opposite to allow patients to see the staff on the corridor and vice versa.

The waiting area is complex with several different clinics running simultaneously. 'Rules' exist regarding who takes priority in clinic lists, and the full effect is disorientating for the casual observer never mind an anxious patient. A proposal that will be explored as a follow-on project is the use of a 'ticketing/waiting' system, which would address some of these concerns. We hypothesise that by giving patients a

[6] Professor Ann Macaskill, SHU Health Psychology, CLAHRC: Better Outpatient Services for Older People: Perspectives Informed by Health Psychology of Patients and Staff Experiences of Medical Outpatients at the Hallamshire Hospital, Sheffield

tangible token, which differentiates between different clinics and gives people a sense of knowing they are in the system the patient experience will be improved.

Signage

A major issue resulting from mapping the patient experience was the difficulty for the patients visiting Medical Outpatients to navigate to different departments required during their visit. For instance, visits to ECG were highlighted as being particularly problematic, since the route is complicated, their destination is another building entirely, and the signs throughout the journey do not explicitly refer to the ECG department until the patient arrives in Cardiology.

Through the co-design process staff and patients explored potential solutions, drawing on experience from other sectors and their own experience of different hospitals. Simple principles from the retail sector were explored with 'store guides' being cited as a useful model to address some of the complexities of signage.

With this in mind, and as part of the larger topic of Wayfinding[7] in BOSOP, prototype signage was commissioned from two Sheffield Hallam University Masters Graphic Design students. The revised signage was piloted with patient representatives in the Medical Outpatient department, and designed to compliment the prototype 'hand out' maps by utilising the same visual cues and colour palette.

Shown below is one of the prototype signs held in a proposed location during the field test, by one of the designers:

[7] Wayfinding refers to the ways in which people navigate through an environment from one place to another and the systems that facilitate this including signs, maps, landmarks and building layouts.

Figure 9: Prototype Signage for Medical Outpatients

Also proposed were floor guides, which list in alphabetical order the different departments on each floor, with the floor that the patient is currently on highlighted in a bold colour (this colour then corresponds to the rest of the signage on that floor).

'Hand Out' Maps

Another outcome of the Wayfinding work were prototype maps that helped visitors (particularly the elderly) to find other locations within the Outpatients department, or a specific location that has been identified as difficult to find (from the experience gathering sessions with Staff and Patients), for example, ECG, Pharmacy and Bloods. Shown below is an example of the prototype map to ECG from the Outpatient Department:

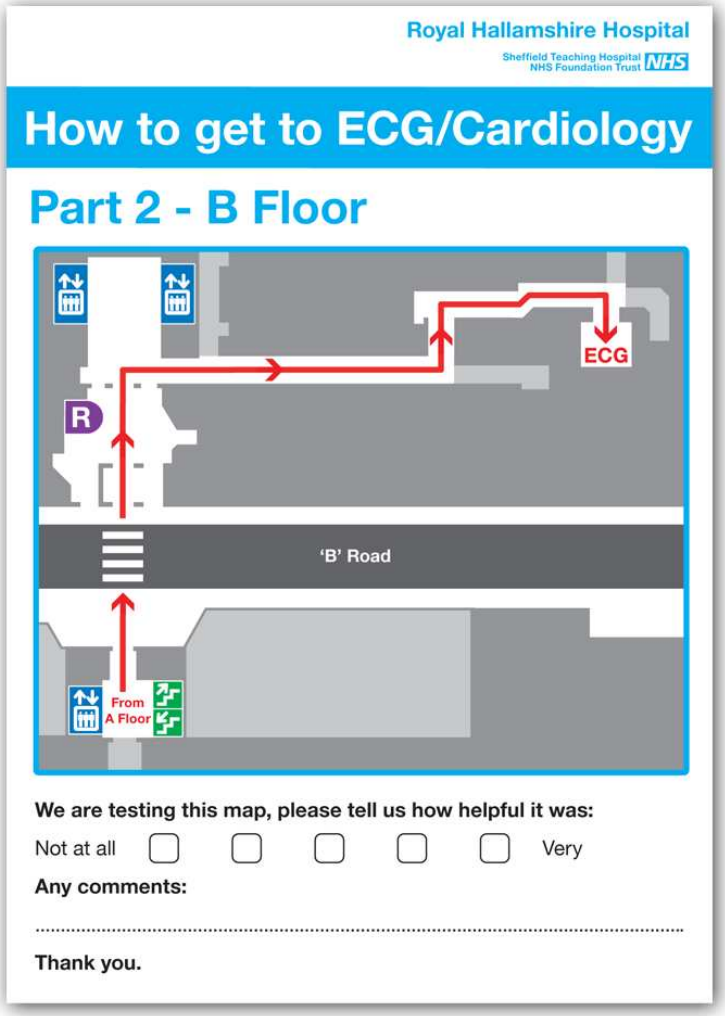


Figure 10: Hand Out Map to ECG

Alongside these maps showing a specific destination, maps showing the entire Outpatient Department were produced, showing main destinations that patients visiting ask for; this being main reception desks for individual departments, toilets, and stair / lift access. The maps were taken from original architectural drawings for the building, and simplified to show only main entrances and thoroughfares. Shown below is an example of the architectural plans for the West wing of the Outpatients Department, A floor:

Figure 11: Architectural Plans for Floor A, Outpatients Department

The above plans are very detailed, but overcomplicated for the proposed maps to hand out to visitors. Hence, the design was simplified. An example of the first side of a double-sided document showing all three floors of the Outpatient Department can be seen below:

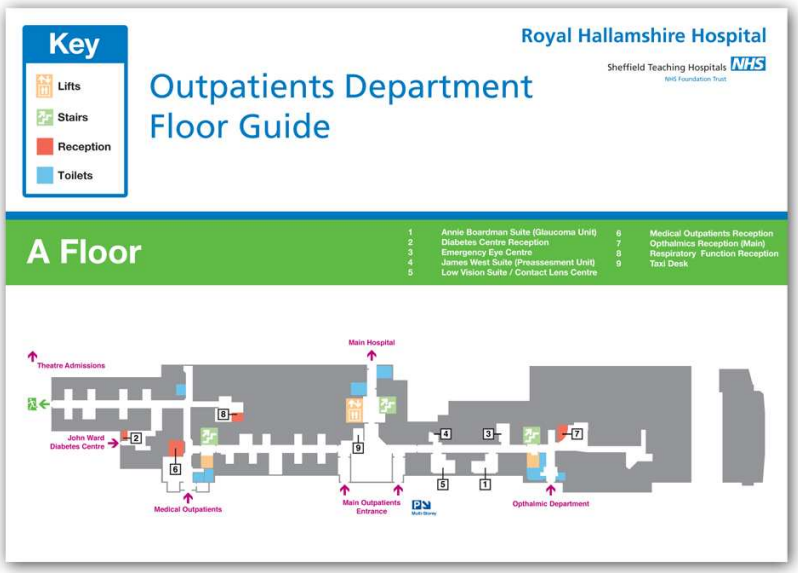


Figure 12: Department Guide to the Outpatients Department (prototype)

There were many more aspects of the service that were addressed through this project, but there were some key attributes of the ideas that gained most traction. Involving designers resulted in very tangible outputs that served to carry the knowledge gained from the project beyond the immediate project team.

The appointment letter became a meme for the project, representing coproduction and high production values in something that was a very ubiquitous within the organisation. It was a useful object to explain the principle of 'touchpoints' to non-designers, as it set up the expectations and integrations with patients and carers before they even stepped foot in the hospital. The inclusion of an image was very easy to do but also powerfully represented the use of different forms of information for different people. The images of the correct entrances to the hospital has subsequently influenced the design of the signage across both hospital sites (see fig 15 below)

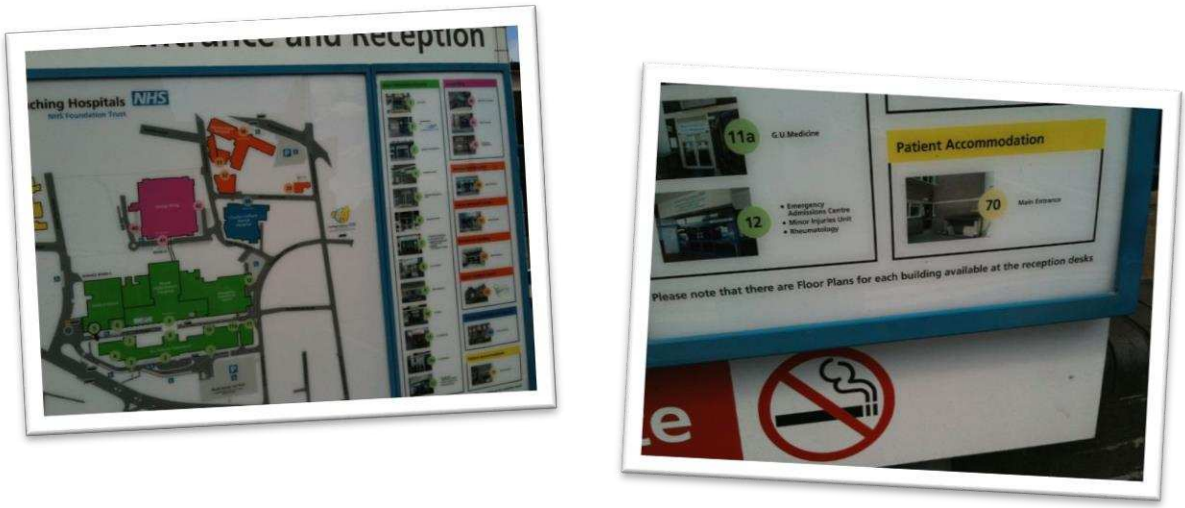


Figure 15

The very meaningful way (with tangible outputs) that patients and carers were involved in the project became a positive way for describing patient and public involvement in service improvement. It described some practical steps that staff could take to engage and work with patients and carers to deliver change that worked for all parties.
It also raised the profile of the use of design methods and designers so much so that Graphic design students now routinely have briefs set by clinical and service delivery teams as part of their undergraduate programme.

Service improvement happens in hospitals all the time (or at least should) what we demonstrated through this project was the 'added value' that a service design approach might bring to working with older people. Whilst age is not specifically a chronic condition it shares many of the attributes one might associate with such conditions. We hope that the outputs of this approach would provide confidence for using these methods with others who might have diabetes or, like in the previous case study, have had a stroke.

Many of the techn[8]iques of service design are recognisable from other forms of service improvement (lean, 6-sigma, microsystems) what service design brings is an explicit attention to experience, the skills of designers allow this experience to be made tangible and that allows a deeper engagement with those people with whom the responsibility of self care lies as they move forward with their own lives.

Reflection

The chapter has briefly outlined through case studies the role of design in the creation of tools to facilitate co-design with end user and stakeholders.

A more traditional application of design has been applied in the creation of products, for example the wearable devices and digital interfaces of the Smart shoe and the BOSOP patient letter and signage system. However these products or service touchpoints have importantly been created through and within a holistic collaborative service design approach involving designers, end users and service and care providers.

Conclusion

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