DESIGN4 HEALTH

Extract of the
Proceedings of the 3rd European Conference on Design4Health
Sheffield 13-16th July 2015

Sheffield Hallam University | Art and Design Research Centre

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Designing across organisational boundaries - Community Dentistry Services.

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Abstract

This paper considers the potential value of visualisation approaches to describing the complex setting of UK health service provision. Through a case study project, which used Service Design approaches to develop a person-centred view of Community Dental Health Services, two visual models of service provision and their value to project stakeholders are discussed. The first comprised a map of the current structure of UK health service provision, created to guide the project approach and introduce the person-centred perspective; and the second is in the form of a draft Service Blueprint. Together they were used to establish an extra-organisational view of service provision. Findings demonstrate that these visualisations of service effectively widened and held-open the scope of the case-study project and that key policy-stakeholders recognised that Design's person-centred perspective, worked across the usual organisational boundaries.

Keywords: Healthcare Service Design, Oral and Dental Health, Person-Centred, Design Approaches, Residential Care, Ageing

Introduction

This paper considers the potential value of visualisation approaches to describing the complex setting of UK health service provision. Through a case study project, which used Service Design approaches to develop a person-centred view of Community Dental Health Services, two visual models of service provision and their value to project stakeholders are discussed.

The UK National Context for person-centred care

The publicly funded Health Service provision in the UK has become increasingly politicised causing it to become subject to frequent cycles of reform. This environment has led to a proliferation of policy, exceeding the rate at which working-practices evolve (Légaré *et al*, 2008).

Improving the quality of care for our growing and ageing older population remains one of the biggest challenges and priorities for the NHS and social care. Patient groups and policymakers are calling for the implementation of person-centred co-ordinated care to deliver the government's vision of *integrated care* for vulnerable older people (National Voices, 2012).

In response to the UK's provider-centric model of statutory health provision Several Voluntary and Community Sector (VCS) organisations are championing a more person-centred focus in healthcare. The Health Foundation, NESTA, The King's Fund and Tuke Institute are prominent examples. The Health Foundation defines person-centred care as follows: '*Person-centred care means providing care that supports people to achieve the health outcomes that give them the best opportunity to lead the life that they want.*' (The Health Foundation, 2015)

Oral Health in UK Residential Care settings

For the first time, the majority of very old people have some natural teeth. This is a success story but for oral health care professionals creates new levels of complexity in selecting and delivering appropriate care. Practising dentists' curative, clinical decision-making approach must be tempered with an understanding of the person and their prospects. For example, they will need to consider that this person may well be dying and that a series of procedures to rebuild broken or deteriorating teeth may be an invasive process where quality-of-life within a time-limited period is the real goal. In these circumstances, a focus on person-centred decision-making becomes paramount; i.e. considering the whole person and their prospects, not just the condition of their mouth. However, the target driven culture of NHS dentistry, leaves practicing dentists unsure of what good-quality and appropriate dental care should be (Steele *et al*, for the Department of Health) According to British Dental Association research, vulnerable older people in care are under-served by those responsible, resulting in poor oral health and inconsistent access to care (BDA, 2012).

Poor oral health adversely affects the general health of the older person. Infection and decay in the mouth can lead directly to increased infections in the gut, can exacerbate some systemic conditions including Type II Diabetes, and leads to poor eating. Poor eating has very significant health affects in a residential care setting, ranging from malnourishment and dehydration (physiological) to loss of enjoyment, motivation and dignity (psychological).

When an older-person moves into residential care, their 'High-Street Dentist', continues to be responsible for their care. However, because home-visits are time consuming compared to the patient attending the clinic, High-Street Dentists are already disincentivised to serve these patients effectively. This is heightened when the person has Dementia and may therefore need to be supported through a process of continuous consent. Consequently, complex cases are so poorly served by High Street Dentists that they become an emergency case and are passed on to the regional NHS Community Dental Health services instead.

Research Approach

The research takes an exploratory case-study approach (Yin, 2003), to examine a collaborative project between Northumberland NHS Foundation Trust, Newcastle University Dental School and Northumbria University Design School. This collaboration involved adopting a Service Design approach to work with a broad sample of Community Dental Health service stakeholders, with a view to conceiving improved service-provision. The collaboration was called the Wisdom Teeth (WT) project and forms the central case discussed in this paper. As such it is herein referred to as the 'case-project'.

In the context of Community Dental Health, this research paper asks: what was the value of design visualisation tools in communicating a person-centred approach to the multi-agency stakeholders who comprise the overall service-provision?

To capture emerging discussion, the two authors of this paper were engaged in a steering capacity throughout the 10-weeks of the case-project, adopting a reflective-practice approach within an action-research model of enquiry.

Two visual models from the case are selected for discussion in this paper, both relating to the user's journey and experience. Visualisation approaches remain core to the Service Design approach (Warwick *et al*, 2014) and the 'customer journey' (or 'user-journey') is one of the most commonly used visualisation techniques (Segelström, 2010).

One of the visual models discussed had been developed before the case-project, a high-level 'health services architecture' model: a macro view of health provision and its multi-agency stakeholders. The second visual model used to discuss and illustrate the user-journey follows a more common arrangement; being overlaid directly into the emerging Service Blueprint for the case-project. (see Figs. 1 to 4)

Establishing the Case-Project

The case-project selected as the subject of this study followed a Service Design approach to explore and describe the context in which Community Dental Health Services support people living in residential care.

The case-project was co-operatively funded between Northumbria Healthcare NHS Foundation Trust, Newcastle University Dental School and Northumbria University Design School. This funding arrangement was important to enable the case-project to be carried out in a 'context of discovery' rather than a 'context of justification' (Dorst and Reymakker, 2006) as would likely have been the case had it been directly commissioned from a single organisation.

The work of the design team in this case-project involved three types of activity, constituting a Service Design approach.

Phase 1 stakeholder engagement and research: semi-structured interviews and observational research (shadowing) were the dominant primary research methods for researching the views, roles and actions of service-providers.

The views and experiences of care home residents and their family carers were investigated through semi-structured interviews with a small number of the voluntary carers of residents.

Phase 2 defining concepts: The design team went on to form and illustrate a series of ideas as conceptual interventions in the service, each responding to issues and/or opportunities identified in the primary research.

Phase 3 prototyping and synthesis with stakeholders: The concepts proposed were each positioned within an initial Service Blueprint document created by the design team. They were illustrated in more detail and/or realised as mock-ups and were then shared and discussed with relevant stakeholders drawn from the group of service-providers engaged in the case-project.

The two Visual Models reviewed

The two key visual models used were the 'health architecture model' and the service blueprint, each used to facilitate the narrative description of user-journeys (or patient-pathways) in the presentations. The two models are introduced here:

'Health Architecture' model

The 'health architecture model' introduced to this case had originally been developed based on data generated through two concurrent pieces of work by co-author Lievesley in 2012. The first

was a qualitative research study comprising in-depth semi-structured interviews with three family carers in 2012.

The second piece of work involved running multi-agency workshops comprising representatives from statutory health, local government social care and VCS service providers, working together to create a map of Health and Wellbeing provision in the city of Newcastle. This work was consortium funded through NESTA's 'People Powered Health' programme.

The journey of the person/patient (and their primary carer) was overlaid onto the map of provision to create the 'health architecture model' which allows a contrast to be drawn between the 'professional' (service-provider) view of what constitutes *the health service*, and the experience of a person (service-user) attempting to address a health issue.

The model maps three key types of service provision: Statutory Sector (NHS); Community Agencies; and Voluntary Sector.
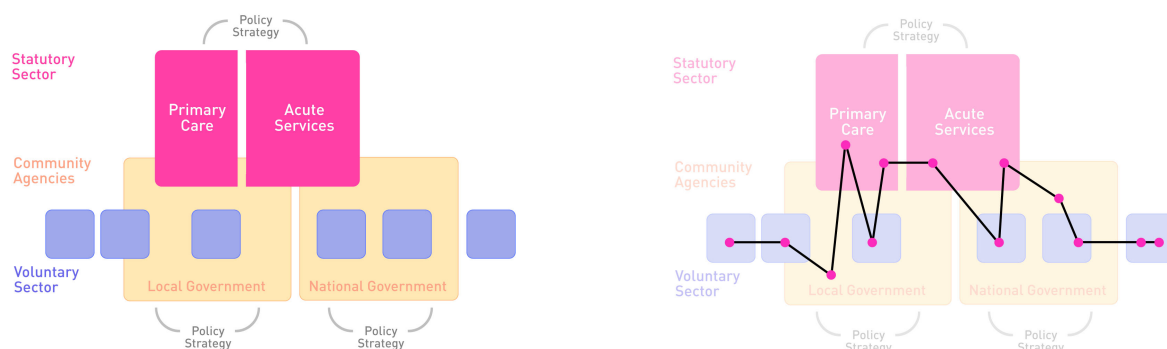

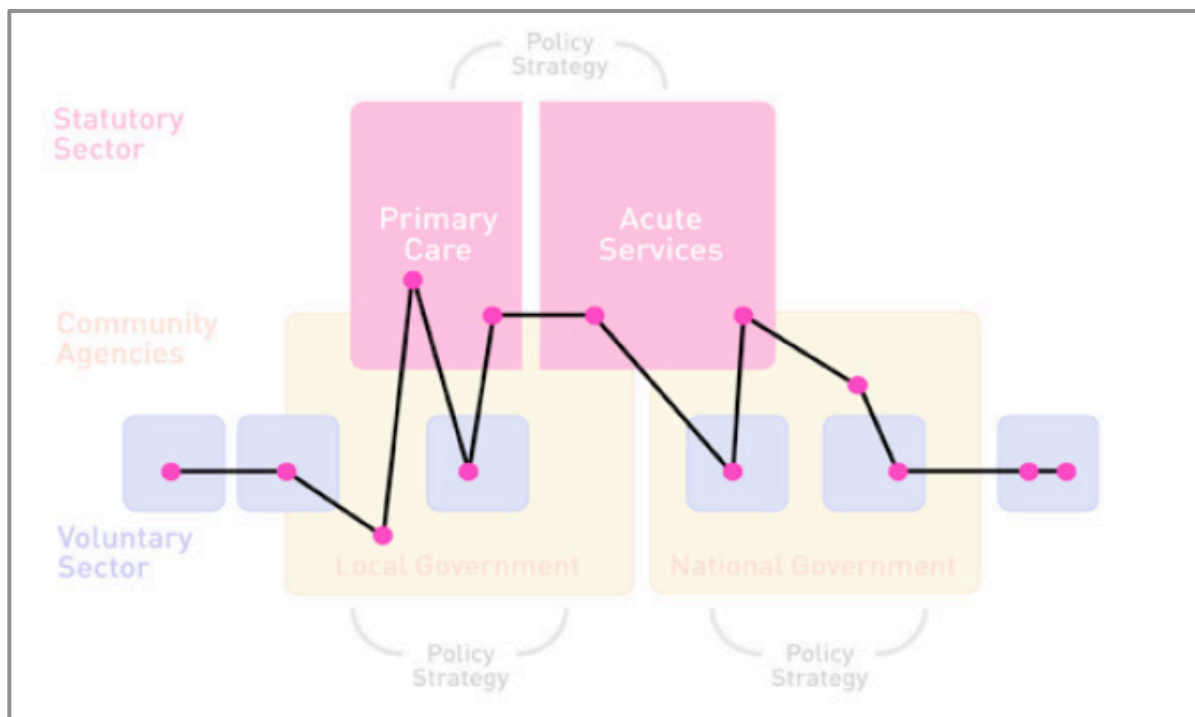Fig. 1 – Health Architecture model. – shown both with and without the notional user-journey.

Fig. 2 – Health Architecture model. – described below

Statutory Sector: Statutory health service provision, what we view as 'the NHS', subdivided into Primary Care and Acute Services (Hospitals).

Community Agencies: The next providers shown in the model are Local Government, delivering services through an Adult Social Care department for example, with service provision ranging from domiciliary services through to residential care. National Government is identified with particular reference to setting national Public Health priorities, which aim to improve health behaviours through education and communication. Nutrition, for example, is a key Public Health policy theme that directly influences Dental and Oral health. The responsibility for delivery of the Public Health agenda recently moved to Local Authorities, so the two sit adjacent in the model.

Voluntary Sector: Voluntary Sector should be interpreted as including the important contributions from family, friends and peers as well as more formal Voluntary Community Sector (VCS) organisations. UK Local Authorities now commonly contract with VCS organisations such as AgeUK to deliver social care in the community.

This visual model of provision is not intended to be exhaustive but shows the range of sectors and organisations that, together, constitute the setting for the health and wellbeing experiences of people. It provides a pattern of service providing bodies that would be recognisable in most areas of the UK. i.e. the underlying organisational architecture of Health and Wellbeing support.

Overlaying this 'architecture' is a line representing a notional service user's journey through the provision, showing where key interactions in their health service experience happen.

Community Dental Health - Service Blueprint

The Service Blueprint developed through the work of the case-project has also become a key visual asset for the communication of the importance of the person-centred perspective in Community Dental Health services. It warrants less written explanation as it can be seen to follow a typical service blueprint format, horizontally drawing separations between service-provider actions (in blue) and service-users' experiences (in green). The generic pathway through the service flows from left to right through a series of transactions. Any one person's user-journey may be made up of a subset of the possible transactions.

In Fig. 3 below, the area of the Service Blueprint representing face-to-face person-clinician contact is framed and labelled as 'interaction with dentist'. This is how the visual model was usually presented to the *implementation* stakeholder group. It was shown in conjunction with Fig. 1, which provides a 'macro' view of the context, followed by this local context defined by the Community Dental Health services.
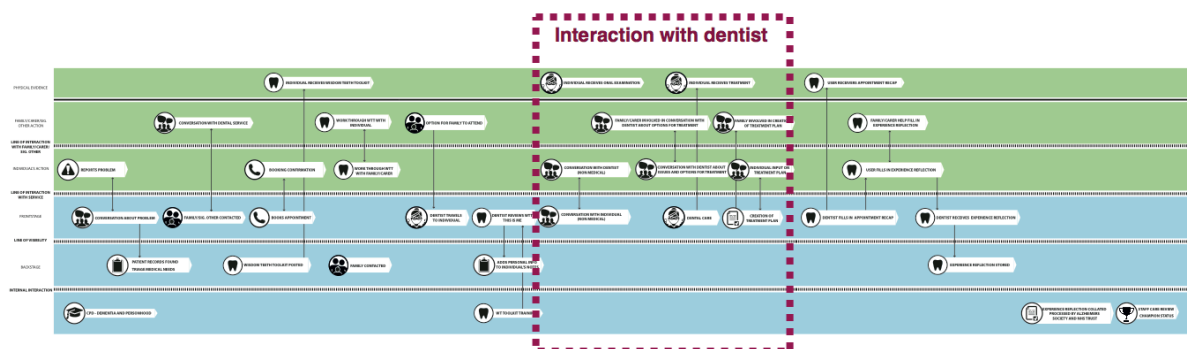

Fig. 3 - Community Dental Health - Service Blueprint showing the service elements required before, during and after face-to-face interaction with the dentist.
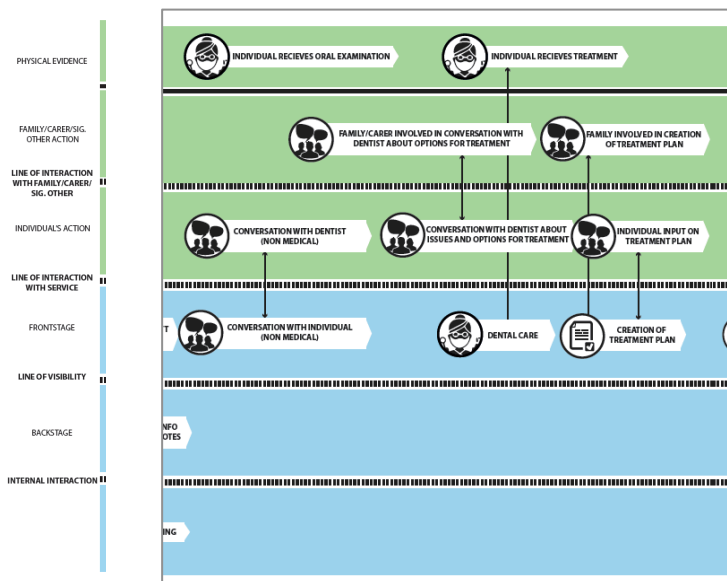
Fig. 4 – Detail from Fig. 3 showing key and the service elements during face-to-face interaction with the dentist.

Stakeholder Feedback and Reflections on the visual models used in the case-project.

During case-project meetings, stakeholder-feedback about the visual material being used to communicate the experiences of service-users was shared by the design-team and the authors. Stakeholders who provided feedback to the study can be described in two broad groupings:

policy-stakeholders operating in the wider healthcare context (included NHS-England policy-makers, Commissioners, Academic Nutritionalists), and *implementation-stakeholders* working in local services and concerned with the case-project, (included High Street Dentists, Pharmacists, Carers organisations, NHS Trust Quality Lead, Dementia Liaison Nurse and Research Pharmacist with experience of implementing Shared-Decision-Making). The following discussion will reference both groups with a stronger focus on policy-stakeholders:

To set the context and ethos of the project during Phases 2 and 3, a number of presentations using the two visual models were made by the authors. In her capacity as a practicing Community Dentist, co-author Wassall provided the following reflection:

"The health architecture diagram and the emerging service blue print have been used with policy makers as a driver for change. In three presentations to national audiences

(including; clinicians, NHS England, potential funders and collaborative partners) they have been used to articulate the importance of designing and developing systems within health and care that allow for working across organisational boundaries and also to tell a convincing story of the need for change in NHS community dental service."

These presentations explained to *policy-stakeholders* the intention in the case-project, to adopt a person-centred perspective, which meant not focusing on the requirements of any one organisation. Across a range of audiences, this premise consistently generated useful discussion and questions and in some cases, tangible funding commitments.

> "As a NHS community dentist, Dr Wassall has been able to clearly articulate the need for IT solutions in community dentistry that reflect the cross boundary, multi-agency care that many of her patients experience."
>
> Peter Coates, Open Source Programme Head, NHS England.

When the case-project was presented to another group of *policy-stakeholders*, a Nutrition specialist commented on one concept proposed for collecting feedback on an older person's eating behaviours by engaging their family in a monthly Sunday Dinner at the residential home. They recognised the wider provision identified in the presentation of the 'health architecture model' making the link between the 'information collecting placemats' proposed in the case-project and wider Public Health imperatives including an urgent need to improve food quality in care-home environments.

> "Having data about an older person's ability to eat creates wider opportunities for the health and care professionals providing care, public health departments and catering services within care homes and hospitals."
>
> Paula Moynihan, Professor of Nutrition & Oral Health, Newcastle University.

This suggests that the two visual models were effective in widening and holding-open the scope of the project, permitting future propositions that straddled organisational boundaries.

The feedback of the *implementation-stakeholders* suggests that the visuals effectively illustrated that the statutory health sector provides only a fraction of the patient's perceived end-to-end healthcare experience, (see Fig. 3) and also captured the idea that most people will discuss personal health issues with peers and informal carers and sometimes through VCS support groups both before and after their interactions with the clinicians.

Discussion and Conclusions:

In an evidence-based culture such as that of the UK Health Service, Design needs a range of tools to show its relevance and effectiveness. This enquiry set out to capture and discuss the value of visualisation approaches in the setting of the case-project: a Community Dental Health service operating in a wider health service context.

The aim of the study was not to present one 'right way' to communicate the potential of person-centred design approaches in healthcare, but to share some ideas on how that might be done. It uses stakeholder feedback and the authors' own action-research reflections to discuss and examine the features of the two visual models used in the case-project. To examine how they support the case for Service Design, (and other person-centred approaches to change), in a culture that tends to prioritise existing evidence-based practice over innovation.

In the case-project described, the Health Architecture Model and the Service Blueprint approach were used effectively to generate engagement and subsequently buy-in from commissioners working within this evidence-based culture.

The feedback from stakeholders suggested that the visual models have two elements that together support the case for person-centred approaches. First, they provided a visual representation of the fault-lines within the multi-agency model of service provision (which were instantly recognisable to them as actors within that environment). Second, they included a visual element to represent the service-user's journey through and between those organisations. In combination, these two visual elements reinforced the futility of trying to improve health and care provision from an organisational policy perspective, compared with taking the person-centred perspective to reframe those systemic challenges.

If accepted by policy-makers more widely across health and social care, this recognition of a person-centred perspective, as a vehicle to overcome the usual organisational boundaries, as seen in this case-project, would provide a strong platform for Design approaches to also be more readily embraced in this context.

Limitations

The visual models were presented to stakeholders in a variety of situations as part of project discussions. As embedded researchers, the authors cannot fully separate the influence of the participants' discussion-narrative from the visual models presented. On that basis, the authors relied on interpreting the qualitative feedback to draw preliminary conclusions about their value as visual discussion aids not as standalone visuals.

Acknowledgements

Special thanks to the family-carers who shared their personal stories with us as part of the case-project and to Nathan Sterling and Harry Maguire who formed the Design team with the authors.

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Access to Images: It is the intention of the authors to provide open access to high-resolution versions of the images included in this paper through their www.researchgate.net accounts.

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