Why Hospitals Need Service Design:

Challenges and methods for successful implementation of change in hospitals

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ABSTRACT

Healthcare is in need of change because of an on-going growing and ageing population. Meanwhile increasing attention has been paid to the potential value of service design tools within healthcare. Service design is the activity of planning and implementing change to improve a service's quality. To manage change, it is important to identify challenges for change in the service that needs improving. A large number of change initiatives fail due to unfocused and insecure management and there is a need for a new way of implementing change. Service design is a user-centric approach by including service providers, end-users and stakeholders in the design process.

This articles gives an overview of pressures for change and identifies key barriers hospitals face when managing change. An overview of relevant methods and strategies from service design is given before they are exemplified through a case study of a service design project at an Emergency Department. Lastly, a discussion on how service design can be used for overcoming challenges and effectively implementation of change.

The article concludes that co-creation and multidisciplinary teams are essential in the context of hospital change management. Further, the article concludes that hospitals would benefit from using a user-centered, holistic approach that considers patient experience in their delivery of care.

KEYWORDS: service design, hospitals, change, implementation, co-design

1. INTRODUCTION

Health care is in need of change [1][2][3] Meanwhile, many new innovation initiatives fail due to unfocused and insecure management and lack of systematic project management [3]. Introducing innovation translates to a change in the organisation and it can be argued that the health sector is in need of new project management tools for successful implementation .

Service Design has gained a lot of attention over the recent years [4][5][6] due to its systematic and holistic approach that includes end-users and stakeholders in the innovation process. Moreover, service design is an interdisciplinary approach, that draws on user-centric methods to improve services [4][6].

Many organisations are starting to examine their customer experience and the value it can bring. This provides great opportunities for service designers [6] as they focus on holistic user journeys and the experience of services. It is said that "When you have two coffee shops right next to each other that sells the exact same coffee, service design is what makes you go into one and not the other" [4, s.33]

There has been a shift in understanding how value is created [6]. The traditional view where users are passive recipient of a service [5][7] gives way to a new approach where users are seen as a resource and an integral part of the innovation process [2][4][5][6].

The position of hospitals in the healthcare system shows that hospitals have a major impact on overall health care, thus can argue that change in hospitals will have a deeper impact than other institutions [8].

The article draws on literature review within the fields of service design, healthcare, innovation and change management to gain theoretical insight in how to effectively implement change in hospitals by using tools from the field of service design. Literature used in this paper is from textbooks and research articles from various academic journals. Further the paper is supplemented with experiences from a case study from a service design project in an Emergency Department.

Though ethics is an integral and important part of research in a hospital context. This will not be discussed in this paper due to the scope of the article.

This article attempts to give an argument of why service design should be a more integrated process for implementing change in hospitals. Firstly, a brief introduction to the hospital context is given. Next it states main reasons for why hospitals need change. The article then identifies challenges for change in hospitals before giving an overview of service design and relevant methods and strategies for implementation of change. Lastly, a case study will exemplify service design in a hospital context and further the article will explore possibilities for how hospitals can benefit from service design process and strategies to overcome the future challenges healthcare is facing.

2. UNDERSTANDING HOSPITALS

Those responsible for planning and managing hospitals need to understand why hospitals are as they are and the nature of the challenges they are facing [8]. Moreover, managers in healthcare have a legal and moral obligation to ensure a high quality of patient care and to strive to improve care [9]. As always, the pressure of patient safety and clinical quality will continue to demand continuous improvement in how care is delivered [10].

Patient-centred care is a recognised measurement of quality of healthcare and is an approach that focuses on patient involvement in consultations to uncover what is meaningful and valuable to the individual patient [11][12]. The treatment ensures that the health decisions respect the patient's needs, wants and preferences [12].

Evidence-based practice is an approach to clinical practice that ensures that all new initiatives within treatment, are clinically tested and sufficient evidence is provided of its impact [1]. On the other hand, evidence shows that no approach for transferring new treatment initiatives to practice is superior [13] and new ways of delivering care is rarely scientific evaluated [8].

Healthcare is predominantly designed to be capacity-lead, which means there is limited ability to make full use of freed-up resources. [14] In some western hospitals, reductions in staff and facilities have not been matched by reductions in workload so that increasing pressures on staff have led to a decline in the quality of care [8].

Though empowerment of front-line workers has been cited as a solution for quality and productivity problems, empowerment might be counterproductive as it leaves workers on their own to resolve problems resulting in quick fixes of issues rather than obtaining the root of the problem [15].

The article will now explain why hospitals are in need of change by giving an overview of external and internal pressure for change.

3. PRESSURE FOR CHANGE

3.1. External pressure for change

Healthcare's primary goal should be achieving good health for the population and ensuring that health services are responsive to the public [8]. Healthcare face challenges in the years to come because of an on-going growing and ageing population [3][8][2][1]. Moreover, patterns of disease, new knowledge and technology and political expectations creates a pressure for change in hospitals [8][10].

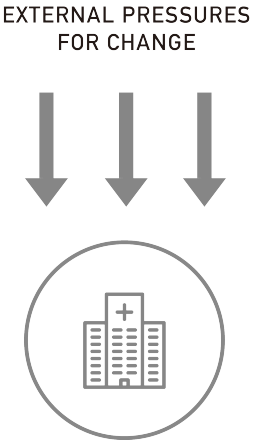


Figure 1: External pressures for change

3.2. Internal pressure for change

Following are identified internal reasons why hospitals are in need of change to be able to meet the external challenges for change.

3.2.1. Challenging hierarchy

Implementation in health care in generally complicated by a lack of interest by the employees [3]. Healthcare is a highly political and complex organisational setting characterised by powerful professional groups which complicate and restrain growth [14][5]. It is plausible to think that hospitals might benefit from reform approaches that challenge hierarchy.

3.2.2. Lack of gaining insight

Though patient involvement has been around health care for a long time, unfortunately what it gains in longevity, it seems to lack in vitality and urgency and the phrase "patient centred" is exceedingly overworked. Though trying to get a patient view, to dates efforts has been more focused on what has been good and bad, and not necessarily why and empathically understanding patients' experiences and needs [2].

3.2.3. New initiatives in need of evidence

Evidence-based practice ensures that a new drug cannot be introduced in hospitals without extensive scientific trials, however introduction of new ways of delivering health services are usually done with little or no scientific evaluation. There is a lack of research on systems and organizations in health care compared to the enormous amount of research on clinical interventions. Systematic changes are often based upon economic and political imperatives, and rarely evaluate their impact upon patients [8].

3.2.4. Holistic patient experience

Today healthcare is treated as a series of discrete events managed by different clinical offices [1]. As hospitals are structured in silos, problem often arise that affect the patient experience. The division into silos makes sense to the hospital, but makes no sense to the patient who sees the entire service as one experience [6]. Hospital administrators and medical professionals could learn from a more hospital-wide approach to abandon their silo mentality [16]. The use of multidisciplinary teams and a hospital-wide approach is essential for implementing change as it breaks down the organizational silos that often block hospital innovation [17][18].

3.2.5. Patient satisfaction

The concept of innovation in hospitals is often in the form of equipment, devices or medical technique. Redesigning processes and practises to improve patient satisfaction can

be viewed as less tangible, harder to measure and can be difficult for managers to quantify and visualise [1]. Meanwhile, research shows that patient experience is positively associated with clinically successful outcomes, and support the case for including patient experience as one of the central pillars of quality of health care, alongside clinical effectiveness and patient safety [19].

The people responsible for implementing change in health care face many uncertainties about how to proceed [8]. The following section the article will identify challenges for change in hospitals. Developing a good understanding of obstacles for change in health care is important to develop an effective change intervention [13].

4. CHALLENGES FOR CHANGE

Challenges or barriers for change can rise in different levels of the system, at the level of the patient, the professional, or the healthcare organisation [13].

Resistance to change is defined as a behaviour which interferes or obstructs the process implementation of organisational change [3]. Hospitals are remarkably resistant to change, both structurally and culturally [8]. Research attest to the deeply institutionalised ways of working in health care and the persistence of powerful groups manifested in silos of specialist expertise that complicate and constrain reform [14] [17] [18].

Organisational learning from failures in hospitals is an imperative as matters of life and death is at stake [15]. Hospitals have been described as palaces of medical power, and it can be argued that prestigious hospitals staffed by the elite members of the medical profession inhibits growth [8] [14]. Edmondson states that "To learn from failures, people need to be able to talk about them without fear of ridicule or punishment." [15, s.67] Hospitals' silo mentality and hierarchy might be seen as a prevention of growth and results in a culture where patient carers refrain from speaking up about issues preventing them to surface as learning opportunities [15].

Service innovation and change is dependent on clinical staff, IT and project managers. However, the methods of service innovation might be unfamiliar and new to clinicians and managers. Innovation in health care is constrained by two drivers; managing risk of clinical services and managing internal and network costs. These constraints maintain a focus on incremental, sustaining innovation at best, as opposed to radical innovation. Healthcare innovations can therefore not be disruptive [1]. Implementation of change relies on the fact that the management is convinced of the service concept while implementing the change [4].

In an environment where time is shortage and a pressure for efficient use of resources can prohibit the engagement in extra improvement activities [8]. It is shown that sudden labour shortage and health care provision can be a barrier for innovation projects [7]. In the next section the article will examine the process of service design and methods relevant to this paper and the healthcare context.

5. WHAT IS SERVICE DESIGN

Service design has gained a lot of attention over the recent years [4][5][6] although the field as such is not new [4]. Service Design can be seen as the activity of planning and implementing change to improve a service's quality. It is an interdisciplinary approach that uses methods from various fields [4][6].

Service design is a user-centric approach that focuses on holistic service experiences [4]. To fully understand the target group, end-user and context as completely as possible, is essential for the implementation of change [20].

There has been a shift towards a new role of the designer where the practice of designing is not exclusive to professional designers [5]. Service design offers a unique approach in the

sense that it includes service-providers, customers and managers into not only the implementation of the suggested improvement, but also the development of it [6][2][5].

Although the design process is complex, and not at all linear the service design can be divided into four phases: Exploration, creation, reflection, implementation [4].

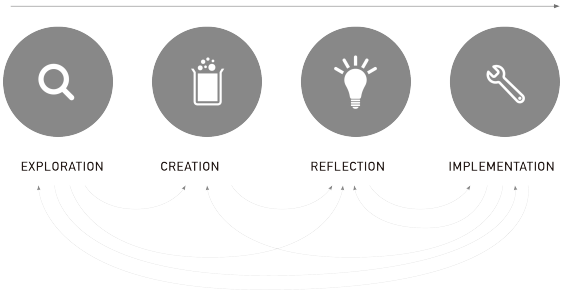


Figure 2: The service design process [4]

Though implementation is the last step of a service design process, this is not something that should be looked into at the end of a project [6]. Implementation should be an integral part of the different stages of the project. It is important to emphasise that service design is an iterative process, meaning that in every step of the process service designers test possible solutions to learn from the mistakes in the previous iteration to improve the solution [4]. This is often done by prototyping and creating something visual early in the process so that the team can have meaningful discussions and make improvement [4][6].

Following this article will describe central pillars of service design that are relevant for successful implementation of change.

5.1. Central pillars of service design

5.1.1. User-centric

By placing the user in the centre of the service, service designers are able to discover how the user experiences the service in its wider context. This requires a deeper understanding of users than statistical descriptions, thus service design uses empathic approaches like interviews, observation and field research to gather insights to understand users' true motivations, social context and habits [4][6]. Designers usually have to become a part of the system they are designing for to achieve lasting change [1].

5.1.2. Co-creation

Co-creation is the process of involving stakeholders not only in the design of the solution but also in the production and development of it [2][4][5][6][21]. The development, creation and testing of these services is called co-creation and is usually done in multidisciplinary teams, as without the deep expertise of various relevant specialists, the knowledge and skills in the service design team would be very shallow [4]. The 'co' in 'co-design' implies a partnership between the professional groups, as well as patients, where they work together and everyone has the opportunity to input their perspectives and experiences on level terms [21][7][2][5][22]. It is not necessarily about what the participants say during a co-design session, as much as the process of co-design where everyone is given the opportunity express themselves [7]. A co-design session has the ability to facilitate future collaboration as it brings groups together and thus creates a feeling of ownership for the innovation being created. Staffs' engagement and motivation is crucial for a sustainable service implementation [4].

5.1.3. Iterative process

One of the main features in service design is that it is not about avoiding mistakes, but rather exploring as many mistakes as possible,

and learning from them [4]. This is often done by making prototypes or probes of products or services and testing them on end-users and stakeholders [4][6]. As a designer, you can save the organisations time and money if you test the experience before resources are spent on actually developing it [6].

5.1.4. Visual communication

Service designers often use visual aids like sketches, pictures or prototypes to communicate. In collaborative teams, it can be more expressive to draw than to use words [23][6]. Designer's way of not only using visual tools themselves, but encouraging all stakeholders to express themselves more visually, can make ideas more tangible, less complex and supports the communication between the actors involved [4][23]. A clear communication between the stakeholders about the desired outcome is essential for the implementation stage [4].

5.1.5. Holistic services

Holistic services are services that examine the whole user journey and consider each touch point of that service. Service design methods like service blueprints, user journeys and scenarios investigates the holistic customer experience and touch points [1][4][6]. This involves not only designing the functionality, safety and reliability of the service, but the whole journey as it is experienced by the users including both tangible and intangible qualities [7].

As can be shown in an example from a hospital in Oslo, Norway, where a successful service design project was implemented that reduced the time needed to diagnose breast cancer patients by 90% by looking at the whole service from end-to-end; from when a patient found a lump to being diagnosed. This gives way for a new way of thinking about health care delivery. The initiative actually reduced waiting time even further, though patients claimed not to be mentally ready to be diagnosed earlier [24]. This emphasises the importance of patience experience and considering user needs in innovation projects.

The article has now provided an overview of the central pillars of service design and will further exemplify this through a case study by showing how they can be applied into a hospital context.

6. CASE STUDY: IMPROVING PATIENT EXPERIENCE AT AN EMERGENCY DEPARTMENT

This section of the article will present a case study at an Emergency Department in Norway. It is important to emphasize that only a brief overview of the project that is relevant to this paper will be given. The project included mapping out and assessing the patient's needs, experiences and behaviour before co-creating a solution that was tested iteratively.

6.1. Project aims

The aim of the project was to see how service design can reduce perceived waiting times in an Hospital Emergency Department (ED). The project was in cooperation with a Norwegian hospital and it ran over a period of four months. One of the main goals of the project was to successfully implement change in an ED by using tools from service design. Throughout the project, the scope and reality of the project's limitations was considered. Because of the limited time resources in a ED, in addition to a hospital strike in the duration of the project, it was important that the final solution did not create further workload on the staff.

6.2. User insight

Through observation and interviews of physicians, nurses and patients we were able to empathically understand the needs and behaviour of the different users of the ED. Following, we used techniques from design to critically analyse our insight to be able to transfer them into actual concepts.

We made use of service blueprints and mapped critical areas connected to the physical space of the ED which aided us in

understanding the system and seeing the patient journey from end-to-end.

6.3. Stakeholder involvement

We used stakeholder involvement from the beginning of the project where we communicated with both physicians and nurses in the project's development and gave them opportunity to give feedback on different levels of idea prototypes. We used visual aids like sketches, storyboards and wireframes to clearly communicate what we were thinking. Following we facilitated a co-design session where we involved three attending physicians, an IT-manager and two patients in a participatory workshop.

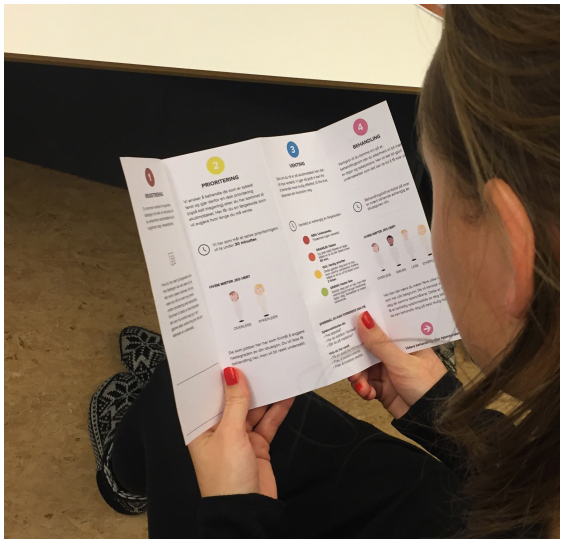
During the workshop, we used a storyboard to help convey insights we discovered in our research phase that showed how patients experience the whole journey through an ED visit. The theme of the workshop was to look at how we can provide sufficient information to patients through the whole patient journey, and what this information should entail. As the designers already had brainstormed the issue beforehand, the results of the workshop was neither surprising nor original to the facilitators. However, it resulted in a form of validation of the concepts we already had made. Furthermore, what the workshop lacked in productivity it gained in finding key change managers and engaging staff.

Picture 1: *Participatory co-design session.*

Through the whole process, concepts and ideas have been tested on both staff and patients to make sure the proposed change was in line with the needs of the users.

6.4. Deliverables

The result of the project was a brochure patients will receive at the registration counter, as well as new information slides and animation on the information screen in the waiting room. These, together with guiding floor stickers and posters were all part of the whole service design proposal. The focus of the concept was to give patients the most relevant information at the different stages of their stay, therefore we considered both static and mobile touchpoints of the service.



Picture 2*: Brochure design*

To create engagement, we created a package of deliverables to the involved stakeholders in the project. We designed a one-pager explaining the main functions of the concept as well as main insights.

6.5. Results and reflection

While the floor stickers and posters are still under development, the information screen design and brochure were implemented at the ED thus we can conclude that the project was a success.

The holistic approach that was done in this project identified that patients had limited insight of internal processes that resulted in

frustration. For example, the fact that hospitals in Norway are run by the government, while the casualty room (in Norwegian: “legevakten”) is run by the municipal, is unknown to patients that come to the ED. Not having this information led a lack of understanding why they had to say the same thing over and over, and undergo the same tests.

What was the most striking in this project was the turn-around from staff where at one point we struggled with getting staff to participate, while by the end of the project saw the engagement the process had created.

The fact that we were realistic in terms of the scope of the project from the beginning enabled us in avoiding disruptive innovations but rather focusing on incremental improvements for the overall experience of patients.

7. DISCUSSION

This paper has now identified key reasons for why hospitals need to change, described challenges for change and introduced the concept of service design. Furthermore, the case study clearly highlighted some important aspects of how the process of service design can be used in a hospital context and successfully implement change which will now be discussed.

Research shows how patients experience of hospitals is positively related to the clinical effectiveness. This might suggest that there is time for an evolvement of the “patient-centred” approach that draws upon service design’s “user-centric” approach to include the involvement of patients, not only in the decision making of their treatment, but also in the development and improvement of how care is delivered. Designers capability to put themselves in the users’ shoes and becoming a part of the context can match hospitals need for gaining insight in patients’ needs deeper than a statistical overview.
As illustrated in the case study, the methods for a user-centric approach resulted in insights the staff were not aware of. For example, the fact that patients are unaware of internal processes and thus feel that they are not in control, can be harming for the patient experience.

Improvement projects should always be well planned and clear goals should be made collaboratively in the beginning of the project. As shown in the case study, we had a realistic view of what we would be able to accomplish with the reality of the project’s limitations, which proved to be important for the success of implementation.

Flexibility is also demanded of project managers, as unforeseen events is a part of a hospitals nature. This emphasises the importance of thorough planning and knowledge about the context where change is being made.

The focus on multidisciplinary teams can be endorsed in any context, though might be especially relevant to hospitals as there is a clear division in expertise and rank. A co-design sessions where all participants are given the opportunity to express their opinion is key because, as shown in the case study, of its ability to create a feeling of ownership and engagement, and includes everyone in the project on equal terms. In the case study the engagement of the staff, as a result of the workshop, was imperative for the success of the project.

As fear of saying the wrong thing or reluctance to disagree with superiors can affect a co-design session, it is important service designers to consider the following:

1. Facilitators of a co-design session should be aware of the environment of hierarchy and take responsibility for leading discussions.
2. Facilitators should make use of visual aids to accomplish a shared understanding in what is being discussed.
3. Sampling of staff and patients should be done with care as a co-design session can be dependent on the

attitudes and personalities of the participants.

Service designers must be aware of the fact that staff is balancing time, thus it might be a challenge to recruit staff for a co-creation process.

Hospitals might benefit from service designs ability to see a service from different angles. It can be argued that service design's holistic approach together with multidisciplinary teams enable hospitals to adapt a more experience-based patient care and helping them in overcoming their silo-mentality.

Though patient experience has been proven to be associated with clinical success, it might be challenging persuading hospital managers to focus on intangible gains in an environment where there is a demand for empirical evidence. However, designer's iterative process and ability to develop quick, cheap prototypes of services can be used as an argument. Testing early in the project can save organisations enormous amounts of money invested in initiatives that may later turn out not to work.

As previously explained, evidence-based care is used to introduce new treatment. By testing concepts designers can provide evidence of the effect of a service delivery before it is implemented. This would benefit hospitals, as in an organisation where innovation is constrained by risk and cost, methods to ensure that project succeed are essential.

A hospital's ability to learn from their mistakes, has obvious appeal. Service designer's iterative nature where learning from failure is essential for further development, might have a deeper impact on how hospitals are being run today as it might give way for a culture where receiving feedback and making improvements, hospitals would benefit from.

Although service design is moving closer to the business world, it can be argued that service design needs to adapt to the hospital context. Firstly, designers must convince hospital managers of the power of patient experience and a holistic patient journey and the effectiveness of service design. Secondly, service designers need to be flexible when doing research in a hospital environment. Lastly, service designers need to adapt to health care and learn the language and needs of the hospital context in order to have the desired outcome.

8. CONCLUSION

This paper argues that hospitals would benefit from using tools from service design when managing and implementing change.

The findings show how hospitals could benefit from a broader meaning to the phrase "patient-centred care" to involve patients when improving the experience of how care is delivered. Furthermore, service design's iterative approach, holistic view and user-centric methods are argued suitable for a hospital context.

Service designers need to be aware of the extraordinary context of hospitals and its effect of the design process. It is argued that a service design process has the ability to challenge hierarchy and silo-mentality by facilitating co-creation.

Drawing on experiences from a case study, the article shows the importance of a multidisciplinary team and co-design to create engagement for a successful implementation of change.

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