What Got Us Here, Won't Get Us There

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Service Design as a catalyst for change: transitioning towards a person-centric, integrated and technologically advanced healthcare system in Scotland.

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Abstract: This research scrutinises the influence of service design in transitioning Scotland's care delivery system towards a more person-centric, integrated, and technologically advanced approach, as well as its application and development in the region's care system. Initial desktop research dissects the prevailing challenges in the Scottish care sector, segmented into social, economic, policy, and technological categories. Through case studies and comprehensive grey literature review, the paper probes how a person-centric, visual, transformative delivery approach might mitigate Scotland's care concerns. Ultimately, four ways service design facilitates the shift towards a person-centric healthcare approach are presented: (1) fostering participatory design and co-design with patients; (2) offering a visual collaborative tool; (3) reframing problem perspectives, focusing on needs over solutions; and (4) enabling a systematic understanding.

Keywords: Service design, Service design in care, Scottish care

1. Introduction

As patients were viewed as passive users of complicated services, the role of the customer in the delivery of healthcare services has historically received little attention (McColl-Kennedy et al., 2012). However, as the cost of healthcare rises, the need for more personalised care increases, and awareness of government services increases, health care practice and academe have recognized and embraced customers' more active role in cocreating the health care service experience (Gill et al., 2011; McColl-Kennedy et al., 2012). But healthcare is a complicated business, and can be a complicated context for design. Multiple stakeholders (from consumers and patients to clinical staff, administrators, and insurers) interact with multiple services (from primary care and academic institutional networks to medical technology systems) in multiple sectors (from clinical practice to insurance and government) (Jones, 2013). In such a complex healthcare environment, the development of people-centred and integrated care has been hampered by traditional practices.

Therefore, we need to rethink and redesign the health care delivery system to use socio-technical factors to empower people in co-creating their health.

By offering a human-centered, comprehensive, and iterative approach to the development of new services, service design can assist in the transformation of healthcare (Blomkvist et al., 2010). Service design can bring new service ideas to life by understanding customer experiences (Patrício et al., 2008), providing participatory design scenarios (Trischler et al., 2019), envisioning new value propositions (Ostrom et al., 2015), supporting the introduction of technology into service (Teixeira et al., 2017) and contributing to the entire new service development (NSD) process (Yu & Sangiorgi, 2018). In 2018 NHS Digital started Service Design Days to leverage service design into improving processes such as ticket sales, theatre operations, insurance policies and health and safety. The Scottish Government published the Scottish Approach to Service Design (SAtSD) in 2019 to support the active participation of local people in the definition, design and delivery of public services. Furthermore, innovative social robot role exploration to enable long-term care for persons with impairments (Kipnis et al., 2022) or the use of service design to challenge ingrained norms and beliefs in mental health services (Vink et al., 2018) are examples of service design applications in care contexts.

However, despite the fact that governments and the care sector are starting to establish service design methods around the globe to support service transformation, the function of service design in the care sector is still largely undefined and poorly understood. In fact, service design has prioritised research into gradual change and experience-based design projects, which are typically rejected by people who are professionals in data research in the care sector. Second, service design is now being implemented inconsistently throughout the world, including Scotland. Particularly in terms of the balance of socio-technical aspects, service designers lack a systematic grasp of how to tackle challenges in complex environments like care systems. Therefore, it is crucial to develop a more structured and systematic understanding of the challenges in care in Scotland and how service design can help to overcome the barriers in order to explore how service design can realise its full potential in Scotland and to deepen the socio-technical understanding of service design.

2. SEPT Challenges in the Scottish care system

2.1 Social challenges: demographic shifts

In concurrence with numerous other developed economies globally, Scotland's population is experiencing a demographic shift towards ageing. From the mid-20th century to the present, life expectancy in Scotland has shown a significant upward trend. Consequently, the proportion of the population reaching pensionable age is forecasted to expand. According to the National Records of Scotland, it is projected that by mid-2043, 22.9% of the Scottish population will have reached pensionable age, an increase from 19.0% in mid-2018 (National Records of Scotland, 2019). In parallel with the increase in the pensionable age population, the relative percentages of the working-age and child populations in Scotland are projected to experience a decline.

This demographic shift towards an ageing population, and the consequent rise in the proportion of senior citizens, necessitates alterations in the nature and structure of healthcare services. As the population advances in age, the incidence of age-associated conditions in Scotland is expected to augment. The prevalence of chronic conditions that predominantly affect the heart, musculoskeletal and circulatory systems escalates with age, as does the incidence of mental health issues, including dementia. The evolving disease burden, characterized by an increased prevalence of chronic and

degenerative diseases, will likely necessitate changes to primary, secondary, and community care provisions.

2.2 Economic challenges: public finance pressures

The trajectory of healthcare spending is predicted to sustain a swift ascent, not primarily driven by increased healthcare utilization but rather due to an array of constraints. Prior to the emergence of the Covid-19 pandemic, the financial model underpinning the NHS was deemed untenable, with the Board heavily dependent on supplementary fiscal support from the government or non-recurrent savings to achieve equilibrium (Audit Scotland, 2022). The pandemic has further accentuated the magnitude of the fiscal challenge faced by the NHS. Concurrently, the costs associated with service provision have surged, and the augmented financial commitments pledged by the Scottish Government have intensified the fiscal strain on the National Health Service.

Factors such as the energy crisis, escalating expenditures on pharmaceuticals and medical equipment, as well as remunerations for medical professionals, have collectively contributed to the rise in healthcare costs. Most critically, however, there has been a significant inability among government departments and care providers to correlate the cost of care with the efficacy of the resultant outcomes. Consequently, a paradigm shift is imperative within the entire healthcare system towards delivering services that are both more sustainable and efficient.

2.3 Policy challenges: obstacles to person-centered care

The Healthcare Quality Strategy for NHS Scotland delineates the objective of person-centered care as the establishment of “mutually beneficial partnerships between patients, their families, and those delivering healthcare services, which respect individual needs and values, thereby demonstrating compassion, continuity, clear communication, and shared decision-making” (Scottish Government, 2010). The attainment of person-centred care is an idealistic goal, but the realization of this comprehensive approach is hindered by an assortment of obstacles. Human-centered care imposes more stringent demands on frontline caregivers, necessitating a broadened skill set, empathy, inclusive reasoning, and proficient communication abilities. Moreover, mutual trust and respect between care providers and service recipients are critical elements influencing the successful implementation of person-centered care. Therefore, a systemic redesign of the care system is essential to facilitate more intimate cooperation between beneficiaries and professionals.

2.4 Technological challenges: Technical potential to be exploited

The advent of technology offers an abundance of opportunities to bolster integrated, person-centered care. Various technological aids, including online support networks, wearables, social robots, connected implants, and health applications, offer a range of convenient and efficient services that can supplement or even supplant current interactions with formal and informal healthcare providers. Additionally, technology simplifies the collaborative processes among ecosystem participants, such as families, medical practitioners, insurance providers, hospitals, pharmacies, and pharmaceutical corporations (Pinho et al., 2014). The incorporation of predictive data analytics, real-time data exchange across back- and front-office systems, and (semi)automated decision-making platforms has the potential to inaugurate novel, more accessible, and cost-effective healthcare services.

The University of Edinburgh has pioneered the Advanced Care Research Centre in Scotland with the ambition of instigating innovation and revolution in elderly care. The Centre aims to transform geriatric care through individualized care facilitated by data science, artificial intelligence, robotics, assistive technology, and other technologies seamlessly integrated into health and social care

systems. These systems are intended to be highly responsive to the preferences, needs, and requirements of specific older individuals.

However, the adoption of novel technology is not without its risks or complications. Automation can engender feelings of alienation among patients and incite concerns regarding privacy, control, and security. Consequently, while new technologies and data present promising opportunities for the healthcare industry, their full potential remains largely untapped.

3. Service design becomes an approach to help Scotland's care system address the SEPT challenges.

3.1 Service design provides a human-centred philosophy and co-design approach to care systems.

The human-centered design process (Kimbell, 2009), iteration as a tool for problem-solving, co-creation, visual communication, and prototyping (Stickdorn & Schneider, 2010) have all been cited as essential pillars of service design. From a care perspective, the human-centred design principles of service design are manifested in three main areas: focusing on user needs to enhance the care experience; providing empathetic design thinking; and co-designing with health seekers. The field of service design revolves around discovering human needs, to design products or services that meet these needs in different touchpoints. The resulting design is understandable and usable, it accomplishes the desired tasks, and the experience of use is meaningful and pleasurable. More specifically, service design particularly focuses on comprehending the human experience and applying this comprehension to improve customer journey design (Sangiorgi, 2009). Service design in care provides deep qualitative insights into the unique experiences of specific populations (e.g. older people, people with disabilities, etc.) and supports the generation of new service concepts inspired by the user's context and overall experience to improve the service experience. The use of user journey maps allows the entire flow of the care experience to be broken down into different touchpoints, allowing service designers and care departments to clearly identify the issues that arise for users at each touchpoint. In line with the notion of inclusivity in service design, the empathy method aids designers in creating solutions that are more in tune with people's wants and capacities. In order to adopt person-centered care, it is crucial for care personnel and organisations to empathise with people and develop services around their experiences. The application of collaborative design approaches and methods, here originating from the field of participatory design (Schuler & Namioka, 1993), has also been motivated by the fundamental role of people in services. Co-creation is a term used in design literature to describe the process of involving stakeholders in both the solution's development and design (Bate & Robert, 2006; Freire & Sangiorgi, 2010). More consumer participation and improved patient-provider relationships are needed for co-design and participatory design in healthcare.

In 2019, the Scottish Government approved a service design approach to the delivery of public services (The Scottish Government, 2019). This provides a user-centred framework for public services with content around the needs of people and communities, and a maturity assessment matrix to diagnose the level and extent of implementation of design principles. The vision for the Scottish Service Design approach is to support and empower people in Scotland to be actively involved in the definition, design and delivery of their public services (from policy development to live service improvement). This brings together national and local government, the health sector, public bodies, charities and the third sector, as well as the private sector. For citizens, the goal is to actively engage them at the earliest stages of service design and throughout the policy development to service delivery process, and to provide them with an end-to-end service. For organisations, the goal is to

embed strong internal capacity to manage and deliver service design projects and to provide a basis for judgement. Within the health care sector, the recent annual report by Dr Catherine Calderwood, Chief Medical Officer for Scotland, further highlights the importance of 'careful and kind care' (Scottish Government, 2019), which fully embodies the principles of personalisation, respect, quality and safety. Another NHS Scotland service design example may be seen in NHS Highland, a geographically scattered distant and rural location where patients may have to travel up to two hours each way for a 10-minute visit. The programme "NHS Near Me," which was created in collaboration with users, intends to systematically assist patients in "attending" outpatient visits via video consulting technology, eliminating the need for considerable travel (Highland, 2022). In conclusion, the Scottish Government has pledged to use service design to provide person-centered, sympathetic, and individualised care and to support the workforce in doing so.

3.2 Service design provides visualisation tools and transformative ideas for care systems.

The creative, visual, and transformative approach of service design can support in imagining new futures in the evolving care environment. Research in service design is no longer focused on developing a single service to achieve customer satisfaction and loyalty; service design is increasingly taking the social structure as the material for service design (Vink & Koskela-Huotari, 2021). In particular, service design in health care focuses on improving services and promoting social change. Future health care systems can be developed while reexamining current industrial logics and achieving far-reaching objectives for patients and the environment thanks to the transformative function of service design. The visualisation approach in service design enables a way of collecting, understanding and communicating information about the goals of variability, and also allows patients, nurses, families, healthcare professionals and other participants in the healthcare ecosystem to join the design process to facilitate holistic system change. Specifically, service design promotes the use of external representations or visualisations that allow designers and other participants in the design process to integrate their respective skills and resources (Holmlid & Wetter Edman, 2021). In this regard, visualisation is an object of thought shared between subjects. It is used by service designers to articulate the insights of actors in the design team to describe design problems through externalised definitions and redefinitions (Kirsh, 2010). Visualisation can also help service designers remember customer data in a way that is initially understood, ensuring that the designer's actions are user-centred long after the data has been extracted, by maintaining empathy for the consumer (Blomkvist & Segelström, 2013).

A service design initiative is being developed by Scottish Care to examine the future of social care in Scotland. The "Collective Care Future" programme was launched in June 2020 to record social care experiences during COVID-19 and build on this knowledge to create a hopeful vision for the future of social care (Shanice, 2021). A future changing landscape for social care has been visualised in "Coileanadh," which was the result of the program's partnership with the service design company Andthen (Scottishcare, 2021). The shift embodied in this future environment is the result of the expertise and experiences of a wide range of care and support providers, workers, clients, families, and other partners across Scotland. The landscape consists of eight principles for change and 39 activities that lay out how practice-based change can be accomplished, carried out, and sustained to produce a society that is more equal, rights-based, and wellbeing-focused. These are arranged according to three main areas of focus, which include the overarching philosophy and culture, the facilitators for policy and partnerships, the potential channels for change in social care practise, and the ways in which change might be implemented.

3.3 Future design research agenda: Service design supplies a systematic understanding.

Service design plays an essential role in providing a human-centred design approach and transformative ideas for the care sector, both in the Scottish region and around the world. The preceding section shows how the service design approach is contributing to the transformation of care in Scotland. However, the health care delivery system is facing significant challenges and the complexity and uncertainty of the care system requires us to further explore the role that service design can play in the care sector. This includes how service design can be used to embed technology and data into care and enable participatory design in the process;The role of artificial intelligence in health care and how it will support and function as an aid to service design; how person-centred and co-design can be used to promote inclusion and equity in care; how new systemic solutions can be designed to move towards a value-based healthcare agenda; and how health public and care policies can be defined and implemented through service design. If we return to the first part of the article: The challenges facing care in Scotland. It is easy to see that the categorisation of future research on service design is the same as the categorisation of current challenges: social, economic, policy and technological. Our understanding of the role of service design in care therefore needs to be expanded to a systemic level, taking full account of social, economic, policy and technological factors and the relationships between them as the main priority for service design.

4. Conclusion

Healthcare systems around the world are under intense pressure to change, and they are struggling to develop creative ways to transform services and are looking for methods to deliver person-centered care models. In particular, service design, which is consistent in principle with person-centered care, is a key driver of change in health care. In resonance with the conference theme “What got us here, won’t get us there,” this research underscores the compelling necessity for transformation within Scotland’s healthcare delivery. It acknowledges that the strategies and methodologies that have hitherto guided us are no longer tenable in carrying us forward in this rapidly evolving field. This realization embodies the essence of the conference title, emphasizing the need to break free from traditional, possibly outdated methods and adopt innovative approaches to navigate the challenges of an ageing society.

Moreover, this study’s congruence with the conference’s specific topic, “Broad approaches and key themes in design doctoral research and education,” is encapsulated in its profound exploration of service design within the healthcare context. On a broader scale, it critically evaluates the role of service design in the transition of healthcare delivery, asserting its indispensability in contemporary doctoral research in design. Subsequently, it introduces four cardinal themes or tenets of service design that can aid the transition towards a more person-centric approach in healthcare: (1) the advocacy of participatory design and co-design with patients, a core ethos in modern design research; (2) the utility of visual collaborative tools, a staple in today’s design education practice; (3) the reframing of problem perspectives, a paradigm shift emphasizing needs over solutions; and (4) the cultivation of a systematic understanding of healthcare services, a vital component in design research and education.

In conclusion, these four guiding principles proffer a cogent argument for the amalgamation of service design principles into design doctoral research and education. By indicating a shift towards inclusivity, practicality, and systemic thinking, they encapsulate the conference’s focus on broad approaches and key themes in the field, thereby affirming the transformative potential of service design in revolutionizing Scotland’s healthcare sector.

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