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An Evaluation Guide and Decision Support Tool for Journey Maps in Healthcare and Beyond

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Abstract. The journey map concept evolved out of the service design field and is still relatively new in the healthcare landscape [1]. Journey maps are visualizations that effectively highlight organizational issues and allow stakeholder groups to be depicted by interest or function for a comparative visual analysis [2]. There are five journey map approaches: 1) Mental (Cognitive) Model Map, 2) Customer Journey Map, 3) Experience Map, 4) Service Blueprint Map, 5) Spatial Map. The objective of this article is three-fold: 1) quantify and delineate the journey mapping visualization techniques utilized from the phase 1 scoping review [2], 2) create a Journey Map Evaluation Guide, 3) create a Journey Map Decision Support Tool to facilitate a standardized method for journey map selection. For those less familiar with journey mapping, this framework can serve as a decision-making tool to facilitate the most effective choice among the different journey mapping visualization approaches. The tools presented in this study can provide a mechanism to standardize the assessment, classification and utilization of journey maps in the healthcare sector and industries abound.

Keywords. Journey map, service delivery, decision support, health informatics

1. Introduction

The journey map concept evolved out of the service design field and is still relatively new in the healthcare landscape [1,2]. Journey maps are visualizations that represent user experiences to effectively highlight issues (e.g., organizational, technical) and allow stakeholder groups to be depicted by interest or function for a comparative visual analysis [2]. Furthermore, journey maps can enable service providers to effectively deploy resources to expand services or mitigate operational risks, based on the visual findings [1,3]. Additionally, the activities can visually highlight complex situations surrounding services, which may have gone unnoticed otherwise [1,3]. Currently, journey maps lack nomenclative consistency and consequently are utilized differently in various sectors [2]. There are five approaches to diagrammatically represent journey maps: 1) Mental (Cognitive) Model Map, 2) Customer Journey Map, 3) Experience Map, 4) Service Blueprint Map, 5) Spatial Map [2,4]. Figure 1 presents an illustrative roadmap, to conceptualize the five journey mapping techniques commonly utilized in healthcare.

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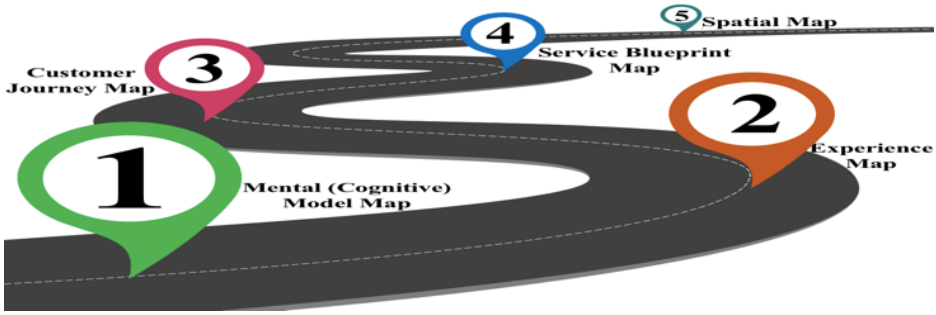

Figure 1. Roadmap of the five journey map techniques

There are many ways to conceptualize the journey (Figure 1). Each journey mapping technique displays information in a unique manner and describes a scenario in a different context. Although there are variations to the models it is also important to note that interrelationships exist (Table 1). Moreover, as illustrated in Figure 1 there is an order in which journey map activities should be conducted. The Mental (Cognitive) Map should be conducted first to gain an understanding of the individuals perception of the product or service [2,6]. Secondly, the Experience Map should be done to gain a basic understanding of human behavioral patterns [2,5]. Thirdly, the Customer Journey Map activities should be done to understand how individuals interact with a specific product or service [2,5]. Fourthly, Service Blueprint Map activities should be conducted to remediate the service pain points, illustrated by the Customer Journey Map [2,5]. Fifthly, Spatial Map activities should be carried out to establish high-level interrelationships and patterns [2,5]. Further, the Customer Journey Map, Service Blueprint Map and the Spatial Map can also be conducted independently, as they are iterative in nature. The objective of this article is three-fold: 1) quantify and delineate the journey mapping visualization techniques utilized from the phase 1 scoping review [2], 2) create a Journey Map Evaluation Guide, 3) create a Journey Map Decision Support Tool to facilitate a standardized method for journey map selection.

2. Methods

This article presented two phases of a comprehensive analysis into the journey map concept. In phase 1, the authors conducted an extensive scoping review [2], which exposed the heterogeneity of the journey mapping concept in healthcare. Phase 2, the focus of this paper, was a complementary analysis of the articles from phase 1 [2], examining the diagrammatical representation and frequency of journey mapping visualizations. Based on similarities and differences between the findings, the Journey Map Evaluation Guide (Table 1) and the Journey Map Decision Support Tool (Figure 2) were developed, to support the selection process.

3. Results

The phase 1 scoping review yielded 60 initial articles and resulted in a final inclusion of 30 articles [2]. The findings revealed heterogeneity in diagrammatical representation among the five journey map visualizations used to illustrate the patient journey [2].With

14 articles using the Service Blueprint Map technique, it was the most prominent of the literature sample [2]. The Experience Map was the second most frequently used approach, with 10 articles visually identifying the end-to-end human experience [2]. Thirdly, the Customer Journey Map technique, had five separate applications in the literature [2]. Lastly, the Spatial Map only had one representation in the literature sample, whereas an example of the Mental (Cognitive) Model Map was not identified [2].

Phase 1 revealed that the promise of journey maps used in healthcare is contingent on consistency of use, standardization of naming conventions and application for each diagrammatical representation. Therefore, in phase 2, the authors created the Journey Map Evaluation Guide (Table 1), which can be used to select the most effective journey map technique to satisfy a specific inquiry.

Table 1. The Journey Map Evaluation Guide adapted from [2,4-8]

Map	Mental (Cognitive) Model Map	Experience Map	Customer Journey Map	Service Blueprint Map	Spatial Map
Focus	End-to-end **cognitive** experience	End-to-end **human** experience	End-to-end **consumer** experience	End-to-end **service** experience	Broad relationships and **interactions**
Flow	Sequenced hierarchical visualization	Sequenced chronological visualization	Sequenced chronological visualization	Sequenced chronological visualization	Unsequenced spatially distributed visualization
Intent	View of user perception of a service, activity or organization	View of user activity which are not specific to a product, service or organization (i.e., can involve multiple)	Views users as consumers of a specific product, service or organization	View of relationships between people, processes and service delivery	View of relationships between locations, patterns and interactions of spatially arranged data
Form	Bilaterally divided	Multiple columns or rows (e.g., swim lanes)			Spatially arranged information

To further streamline the journey map classification and assessment process, the authors developed the Journey Map Decision Support Tool (Figure 2). This tool can further assist healthcare and organizational stakeholders in their assessment needs. Specifically, this tool guides users' selection of the appropriate journey map depending on: a) if a sequenced timeline is important, b) if the lens of the experience is important.

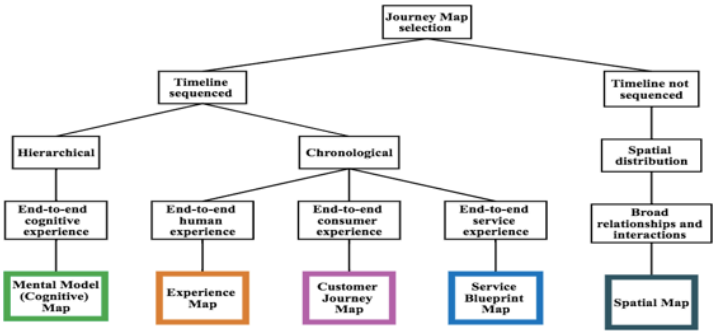

Figure 2. The Journey Map Decision Support Tool

The Journey Map Evaluation Guide (Table 1) in conjunction with the Journey Map Decision Support Tool (Figure 2), can enable healthcare stakeholders to effectively select the most appropriate technique for their operational needs and desired observational outcomes. Adhering to both guidelines, will support a standardized approach to journey

mapping activities, ensuring that the information is captured and visually represented in the right context. The availability of structured operational data will enable comparative analyses of human experiences associated with organizational processes, products or services. Additionally, in a healthcare context, the expedient exposure of pain points via the mapping visualizations could result in cost savings and efficiency gains.

4. Discussion and Conclusions

Journey maps are visualizations that effectively highlight organizational issues (e.g., workflow, technical, knowledge gaps). Moreover, the mapping visualizations can identify operational issues such as staffing shortages, clinical workflow bottlenecks and other factors that could compromise patient care. This study described five different types of journey maps (Figure 1) [2,4]. Additionally, the Journey Map Evaluation Guide was presented to inform appropriate journey map selection. Furthermore, the Journey Map Decision Support Tool was provided to illustratively, guide the flow of standardized journey map selection. Consistency in journey mapping techniques, can provide generalizable data that could be used to assist decision makers in conducting hospital capacity or resource assessments. Additionally the mapping activities could illustrate the relationships between electronic health record design, usability and safety [9]. However, the tools provided in this study are not limited to the healthcare sector and can also be used as a framework to guide the consistent utilization of journey maps in other industries.

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