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Health and Design at Service of a Refugee Camp in Iraq

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ABSTRACT

This project emerges from the need to counteract a scenario of risk and unpredictability in the care provided to patients in illness situations, which stems from a poor or non-existent health record system (HRS). The direct contact in the year of 2017 with an emergency medical Non-Governmental Organization (NGO), working in context of humanitarian crises, demonstrated the precarious and yet scarce presence of such a system. The lack of practicality, easy understanding and access to other health partners proved to compromise the quality of care. Since a functional HRS (via paper or electronic means) is a core component for the management, delivery, and safety of quality in healthcare, the identification of a simple and yet effective system, capable of maintaining a history of care provided, is imperative. This need increases exponentially when the focus is on a humanitarian crisis context, in which populations have been forced into displacement and the health system is disrupted, of which the Internal Displaced Persons in Iraq are an example (commonly referred as refugees). The constraint of resources and the clash of different cultures and experiences between professionals, can hinder or even compromise the provision and quality of care, as well as the experience and perception of patients themselves regarding the services provided. With this study I propose the mapping of a HRS within an emergency medical field hospital, in a refugee camp in Iraq, to ensure the quality of emergency management and delivery of care, in a scenario of instability and political uncertainty. This system, which functions as a systematically collected database, presents specific health characteristics of a given patient when receiving differentiated care essential to guarantee high standards of care. A service design methodology to test the hypothesis will be used through a service blueprint development, capable of mapping the activities, processes and systems involved in a patient's health experience. Design research methods such as service safari and user shadowing with informal ethnographic interviews will be implemented, as well as workshops with national and international health professionals involved with NGO work. Thus, it is expected to re-design a robust monitoring and patient track, with faster access of the patient's history to health professionals, a better prevention of medication errors and duplication, and a greater transparency in the management and delivery of care. The easy implementation of the system will also allow an easier communication of patient's needs and care, between different health stakeholders.

Keywords: humanitarian crises, Humanitarian health sector, Health record, Health information system, Service design, Service blueprint

INTRODUCTION

Forced displacement and refugee crises are changing our world. Nowadays more than 70 million people have been forced to flee from their homes

(Kohrt et al., 2019) and the number of people finding refuge inside their own countries - Internal Displaced Persons (IDPs) - has reached 40 million. This situation not only intensifies peoples' health needs but undermines the preexisting ones as the health systems' coping mechanism are undermined (Spiegel, 2017; Debarre, 2018).

The above scenario led me to Greece in 2017, to work with an emergency medical NGO called Adventist Help, at a refugee camp in Athens. The camp was an old, fenced factory that had been partially renovated to accommodate more than 700 individuals. Among the organizations delivering essential services in that camp, there were two health organizations (Adventist Help e MDM) providing 24-hour primary and emergency care inside the camp. The problem that soon became noticeable was the lack of an efficient standardized health record system (HRS), and it was clear that it was compromising the communication between the various stakeholders and affecting the continuity of patient care.

Adventist Help was founded as an informal group initiative to provide essential medical care to refugees arriving on Lesvos' beaches. Initially there was no formal HRS in place. When medical services were transferred to the refugee camps, in mainland Greece, a google sheet was created where doctors and nurses could register patient data, clinical findings and treatment given, simultaneously. Although the system provided the essential information, some challenges started to be perceived. Records were entered on single google sheet lines, where clinicians would have to introduce large data entries in a single row, making the structure extremely cumbersome and difficult to access. In addition, patients often would not bring any documentation causing the duplication of the patients' records often under different name spellings (eg. Mohammed, Muhamad, Mohammad, Mohaned etc), resulting in a fragmented patient health record history.

MDM, on the other hand, was using both a paper and digital HRS. This has further aggravated the situation since the organization's staff was the only group with direct access to the paper records, and the digital records were written in Greek. All the above scenarios made the delivery of care frustrating and prone to clinical and prescribing errors.

The context of a humanitarian crisis can change, but the essence of the work is to provide aid that decreases human suffering (Jordan, Lewis and Roberts, 2021). I witnessed it when I moved to Iraq in 2017, to provide health services at an Emergency Field Hospital and Primary Health Clinic inside an Internally Displaced Person's (IDP) camp. The consequences this kind of conflict brings, going far beyond war-wounded to an entire community's health, which makes the work health actors vital, were clear (Debarre, 2018). Since the beginning of 2014, according to the Office of the UN High Commissioner for Refugees (UNHCR), around 6 million Iraqis have been displaced across the country (Department of Foreign Affairs and Trade, 2020).

Once again, the experience reinforced what literature has proven, that having an ongoing HRS is an essential communication tool to inform other healthcare professionals about the patient's clinical condition and future care planned (Brooks, 2021). Holding a good health record keeping is essential for achieving quality healthcare as it serves as good clinical practice and ensures

patient care continuity and safety, improving communication between all stakeholders (Pullen and Loudon, 2006; Mathioudakis et al., 2016; NHS, 2018). It also reinforces transparency in healthcare, leading to a better patient's health status and improvement on the performance of the health system (Thieren, 2005; Aqil et al., 2012). By producing and integrating the clinical data, HRS will improve the health service efficiency and effectiveness. (Lippeveld, Sauerborn and Bodart, 2000).

This brings me to my research main goal of mapping the HRS at the emergency field hospital in Iraq I'm working with, to ensure high standards of care, by understanding the current problems and gaps/opportunities to a future re-design of the system. My research questions are 1) How can a service blueprint help identify opportunities to improve HRS in humanitarian crises? and 2) To what extent can a Service Design approach improve healthcare standards and delivery of better care in humanitarian crises?

The topic of health information systems (HIS) being central for achieving health has long been identified by the World Health Organization (WHO). HIS are swiftly changing and developing, thus the need to efficiently manage essential information at all levels of health services, and the use of that information vital for decision making. One of the features for enabling health management to ultimately improve the systems' performance is a strong HIS capable of producing data that is reliable and timely to make evidence-informed decision making (Lippeveld, Sauerborn and Bodart, 2000; Barry *et al.*, 2017). In his research, Thieren defined HIS in emergencies as "a set of data collection platforms implemented by a coordinated group of humanitarian actors generating information to support strategic decisions, monitor changes, prioritize action and allocate resources (…)" (Thieren, 2005, p. 585).

An effective response to the health needs, in a conflict-affected setting, depends on the coordination between all humanitarian actors, and accountability for the services provided, being the collection and sharing of health data one of the factors in the assessment of the health professional's performance (Thieren, 2005; Debarre, 2018; Jordan, Lewis and Roberts, 2021). Before conflict broke in many of the affected countries, HRS were already weak and collapsed completely after, making decisions and interventions difficult to implement (WHO, 2017; Debarre, 2018). In emergency situations, as it seems no one is in charge of health systems, health actors mainly use HIS to take decisions upon the continuity of their programs and not patient record keeping (Thieren, 2005). For those organizations that become established they may develop their own HRS to meet their needs, a good governance and transparency of clinical care, but become more reluctant to shift to a uniform system (Aqil *et al.*, 2012; WHO, 2017).

The development and intervention of health strategies, outside the humanitarian context, has been proven not to be an effective or efficient strategy (Kohrt *et al.*, 2019). Some of the obstacles to a robust HIS implementation (and subsequently an HRS) can arise from the lack of training, motivation or engagement of health workers; restricted systems' ownership; and inadequate functionality of the electronic systems. The delivery of care that improves or maintains health is only achieved through a consistent optimization

Table 1. Characterization of observation 1.

Date	Context	NGO contact	Gender	Age	Experience	Duration of observation
14 Dec 2021	Corona virus clinic	Nurse 01A	male	38 years	Over 5 years working with international (and expatriate health staff) and local health NGOs	~ 30 minutes

of healthcare by a high-quality health system. Such a system is rooted in the populations' health needs and expectations, platforms that assist care delivery, and data tools and resources that will help the system to learn from it (Kruk *et al.*, 2018).

METHODOLOGY

To understand the current situation regarding the HRS functioning and management, a service safari was developed in two health NGO's working with IDPs. User shadowing with an informal ethnographic interview script was implemented to document the present system, as well as *touchpoints* (interactions between user and service) (IDF, 2021) and any opportunities/*pain points* (problems in the user's experience with a service) (Gibbons, 2021). The observations took place in two different clinical settings in separate IDP camps, through discussion with a representative doctor from one organization and a senior nurse from the other.

The first observation site was a Coronavirus Clinic, which was specifically established as a referral center to manage suspected and confirmed cases of Covid-19 from a cluster of IDP camps. The interview was scheduled to be no longer than 45 minutes to understand the patient's journey and assess how effectively the HRS displayed the interaction between the patient and the health professional.

The HRS process in the clinic is as follows: A health record sheet (A) is populated by the treating nurse, consisting of a brief single-line-per-patient entry with patient details, clinical diagnosis, and a treatment summary. Record sheet (B) is then completed – it is a registry of all suspected Covid-19 patients that present at the clinic, containing patient general information such as name, age, tent number, close contacts, etc. At the end of the shift, records are conveyed to a central office, were a data clerk transfers all data to a central excel database. After the information is registered digitally, the paper records are sent to archives at a central location, at the organization's headquarters. In addition to the above processes, patient information is also entered on a customized tablet, in the clinic, that conveys relevant data to the Ministry of Health. Table 1 characterizes observation 1.

The second observation was conducted at a Primary Health Clinic (PHC). As in the previous observation site, an informal visit was scheduled with

Table 2. Characterization of observation 2.

Date	Context	NGO contact	Gender	Age	Experience	Duration of observation
15 Dec 2021	Primary Health Clinic (PHC)	Doctor 01B	male	30 years	Over 3 years working with international (and expatriate health staff) and local health NGOs	~ 45 minutes

one of the doctors from the organization. In this clinic, the patient journey commences with temperature screen at the entrance before the patient enters the central waiting area. Thereafter, a data clerk opens a specific health record sheet (C) for each patient where details are recorded (name, tent number, date, phone number). Record sheet (C) is then passed to the nurse to register the patient's vital signs and any other relevant observations. Simultaneously, patient's details are registered in a logbook for organizational accountability. The treating doctor then records his notes and prescriptions on the same record sheet (C) which the patient finally takes to the pharmacy to collect their medication. At the end of the working day, the data clerk collects all record sheets from the pharmacy and combines the data onto a central excel spreadsheet for reporting. The paper records are also archived at the NGO headquarters weekly. Table 2 characterizes observation 2.

OUTCOMES

Observation 1, despite not being a typical clinic environment, revealed a functioning HRS. In their system, the patient journey is short and simple. There is one main record sheet (A) containing clinical records of patients, and a second (B) simple patient registry. Some issues: Minimal space is present for clinical information on record sheet (A), combining multiple patients' data onto one sheet. Also, in record sheet (B) the documentation process is doubled, as the information must be reentered by a data clerk on a digital HRS.

Similarly, Observation 2 also revealed the presence of a functioning HRS, but with more touchpoints as the service in this facility is more comprehensive. This is a very simple single paper system and workflow; and there was some form of a digital patient record available for review at follow up, albeit brief.

Problematic areas of note in both observations: In each case, very brief patient data (a single line entry) is entered by a clerk with no medical training onto each relevant database. This is very prone to error. Also, only one diagnosis can be entered per patient visit (particularly an issue in observation 2). The clerk decides which is the most pertinent and enters that as the visit diagnosis. This is not good practice as many patients have multiple comorbidities that need to be adequately recorded. In both observations,

with follow up visits, the only medical record the treating doctor has access to is the brief entry into the database addressed above. This will significantly affect the continuity and safety of patient care and require repeat history taking with every visit.

The presence of a data clerk to enter patient notes onto a database could possibly be an unnecessary addition to the clinic workflow. The treating nurse or doctor could easily record the relevant medical information themselves during the consultation without slowing down the process significantly. It would improve accuracy, result in more pertinent clinical records being kept, and save time and money.

FINAL CONSIDERATIONS

It was somehow difficult to make health professionals in both facilities understand the relevance of researching this field, as they are merely employees of large organizations with well-established structures. The current processes they work under have been in place for years. Most felt that their basic HRS was adequate as they were used to working in other medical facilities that had minimal to no HRS in place. Most practitioners come from very strained facilities, with minimal resources, no access to digital HRS, high patient loads, and a virtually nonexistent medicolegal threat, possible reasons for the lack of attention to HRSs.

Considering the challenges faced by clinicians in humanitarian medical facilities of this nature in Iraq, it is admirable that a functioning HRS system is present in both facilities. These observations however open the door for further study on how systems of this nature could be redesigned to improve workflow, allocation of resources, and most importantly improve the safety and quality of patient care.

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This paper is part of a broader research project, as the outcome of my master's degree in Design for Health and Wellbeing at the Polytechnic of Leiria, which covers the duration of 12 months. During this time, I will have the means to apply all the service design methods proposed initially, but for this paper's purpose only the ethnographic observations' phase will be considered.

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