



## UNDERSTANDING THE CUSTOMER EXPERIENCE IN HEALTHCARE FOR PRESSURE ULCERS

### A Service Design Approach

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#### Motivation

Pressure ulcer is a chronic wound very common in Portugal and worldwide – there are approximately 4.5 million pressure ulcers in the world that require treatment every year –, and it frequently occur in patients with limited mobility and/or with advanced age. The great majority of the costs and suffering related to pressure ulcers care can be greatly attenuated if the problem is detected early.

As the registration, characterization and monitoring of pressure ulcers play a key role for early diagnosis, there has been a growing interest in mobile information and communication technologies to ensure the access to patient's information in real time.

The benefits of mHealth are related to the ubiquity, relatively low cost and growing technology capabilities of smartphones. The recent improvements on the camera and image quality opened up new opportunities for the registration of pressure ulcers, a chronic skin condition that is inherently visual.

The purpose of this research is to understand the customer experience of multiple actors involved on pressure ulcers 'care and identify the needs and problems to be solved through a technology-based service.

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#### Study

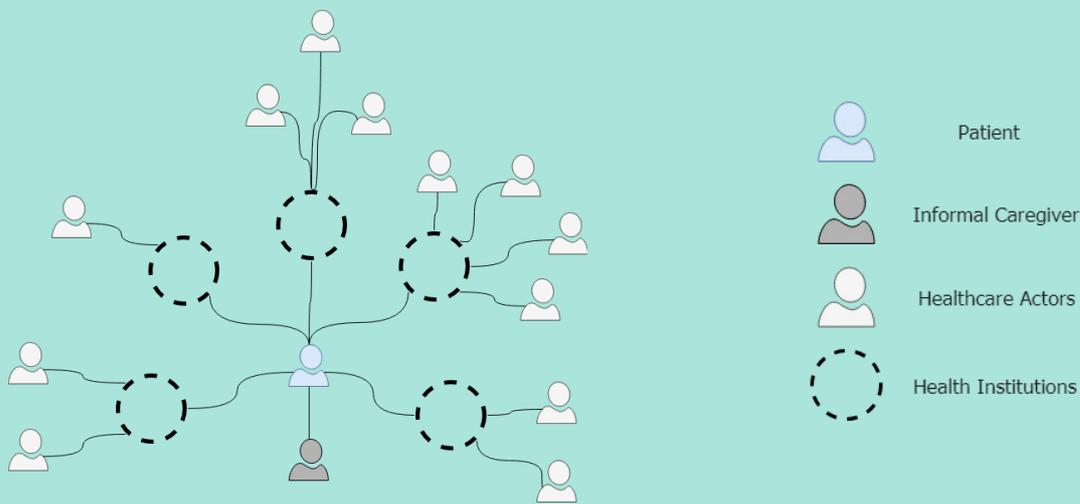
This qualitative research is based on tenets of Grounded Theory and consisted of twenty-five in depth, semi-structured, individual interviews with healthcare professionals (nurses, doctors and pharmacists), informal caregivers and patients. The interviews were recorded in audio and literally transcribed for content analysis supported by NVivo software. Based on this analysis, the results were systematized and modelled through a service design approach – Service Design for Value Networks (SD4VN). Complex environments such as healthcare involve multiple actors, therefore, experiences are influenced by many interactions. SD4VN visually characterize how actors are related to each other and interact to concreate value.

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### Findings

The study shows that many actors, with different specialties, from several organizations, are involved in pressure ulcers' care. Patients and/or their informal caregivers can interact with several organizations when dealing with pressure ulcers.

The value network of pressure ulcers' care is very complex, and the levels of interaction are different, since each actor has his own role. Several actors were studied, such as nurses, doctors, pharmacists, informal caregivers and patients.

The nurse revealed to be the actor with the most interaction since is the main responsible for the ulcer management, namely in terms of prevention, treatment and monitorization' activities. Besides practical care, nurses also have the challenging task of managing health records and it proved to be the biggest pain point when providing care. Simple tasks as register, access and share information requires a lot of time and effort that should be focused on 'practical' care instead.

Study results show that nurses' experience could be improved if they had a technological solution which would improve information flow between healthcare professionals and the image acquisition, considered a fundamental visual help to assess and track wound evolution. Nurses sometimes are forced to abandon the image component because its management only delays care delivery.

### Conclusion

The findings suggest the need to streamline and systematize the process of documenting care. It was highlighted the need to have a mobile solution which allows nurses to: (1) assess wound characteristics and simultaneously register the information in real time; (2) access to ulcer descriptive data as well as scales for pressure ulcer risk assessment, such as the Braden Scale; (3) access previous treatment and patient's history to decide on the next treatment; (4) communicate with colleagues by notes or chats; (5) check a to-do list on a daily basis so they can quickly know what patients need treatment and what type of treatment; (6) standardize wound terminology, so every record entry is perceptible and understood by every professional; (7) capture good-quality ulcer image and automatically store it in the right place; (8) track wound status and evolution through images and/or charts using data input; (9) easily share information with nurse colleagues and ask for clinical advice or discuss with the doctor new procedures.

The results obtained from this study are currently being used to assist the development of a new technology-based service related with mHealth to assist healthcare professionals and promote the overall effectiveness of pressure ulcers' care.