Healthcare Infrastructures in Ecuador: Challenges, Reflections and Opportunities for Digital Health

Abstract

Besides the efforts of the Ecuadorian government in the last decade to improve the healthcare infrastructure, it still falls short to meet the healthcare needs of its population and remains far away from providing equal access to healthcare services. Based on a visit to an itinerant health point in a rural community and research conducted in public and private hospitals, this study presents multiple infrastructural challenges that impact both the everyday caring experiences of patients and the healthcare professionals’ work practices. Reflecting on these challenges, we discuss some opportunities for future design of digital health tools and services in the Ecuadorian context.

The Ecuadorian Healthcare Infrastructure

Itinerant Health Point in a Rural Community

Lack of Human and Physical Infrastructure in Rural Areas:
- During the visit, the health point looked abandoned, understaffed, and lacked the necessary equipment and physical infrastructure.
- According to the community leader, at least once per week one health staff member should be at the health point.

Two Public Hospitals, Andean Highlands

Difficulties Understanding Prescriptions and Messages:
- 80% of the women mentioned that it was difficult to understand prescriptions because they were focused on their small children that accompanied them.
- For nutritional prescriptions, the list of prohibited or restricted foods is usually delivered in written documents without images.
- There were health messages in the waiting area e.g. “Do not take medications that were given to your neighbor.”

Language Barriers and Low Literacy:
- 28% of the participants of the study were illiterate and 35% spoke Quechua as their mother tongue and Spanish as their second language.
- 46 out of 48 health staff did not speak Quechua.
- Healthcare staff commented that indications are more difficult to give to people with low literacy.

Lack of Time during Consultations:
- There is a maximum of 20 minutes available for consultation at these hospitals.
- The time is not sufficient to make sure that the patients understand their prescriptions.

León Becerra Private Hospital, Coast Region

Lack of Coordination and Interoperability:
- There is a lack of interoperability between the Electronic Medical Record (EMR) system and the billing system.
- Patients and caregivers must provide the same information to both the hospital admission assistant and the cashier before receiving care services.
- The Leon Becerra’s electronic medical records are not shared with other hospitals and it does not have access to any information from other hospitals’ EMRs.

Lack of Situation Awareness:
- Doctors triage patients with the assistance of an emergency nurse who takes the vital signs of patients and gives them to the doctor written on paper.
- The doctor triages the patient considering the urgency of the case and writes down on paper the order in which the incoming patient will be seen.

Failing to Respond to Emergency Cases:
- It was reported that there are doctors who do not respond to calls or refuse to be assigned, delaying hospitalization.

Poor Usability of Electronic Medical Records:
- Staff at the ED complained about the EMR interfaces and suggested to improve the interfaces to input and retrieve patient information faster to assist more patients in the shortest time possible.
- Doctors commented on their need to obtain the patient’s medical history on a single screen without having to input a range of dates.

Additional Infrastructural Breakdowns & Data Quality:
- ED staff commented about the duplication of records in the system and that the EMR is down sometimes.

Discussion and Conclusion

The cases highlighted key challenges patients and healthcare staff face while interacting with healthcare infrastructures. Reflecting on these challenges enables us to bring forward design opportunities in light of an increasing availability of 4G mobile network coverage, latest technologies and apps development and Internet access and use of mobile technologies in Ecuador and their potential use in the healthcare context. Future research can explore the following strategies:
- Implementing strategies and digital health interventions to support patients and caregivers to navigate across distributed and fragmented healthcare services.
- Enhancing the usability and scalability of healthcare information systems to ensure continuity of patient care.
- Shaping the experiences in hospital environments.
- Digital health that fits multicultural healthcare infrastructures. The challenge for HC4D researchers is to further understand culturally diverse LATAM contexts and create digital ecosystems bridging the gap between multiple stakeholders (academics, healthcare providers, policy makers, NGO’s, technology industry and local communities, etc.) promoting active participation in the design process. This might benefit from building community health innovation networks, north-south and south-south collaborations, intercultural policy implementation, as well as developing and evolving service design capabilities to enhance equity in a multicultural society.