



Mexico - Investigating novel methods and best practices for service design and patient safety in the Mexican healthcare service

Carlos Aceves Gonzalez, Universidad de Guadalajara. Principal Investigator in Mexico
Alexandra Lang, University of Nottingham - Principal Investigator in the UK
Elvira Perez Vallejos, University of Nottingham
Rosa Rosales-Cinco, Universidad de Guadalajara
Carlos Diaz de Leon, Universidad de Guadalajara
Derek McAuley, University of Nottingham

According to the World Health Organization (1), research has shown that an average of one in ten patients is likely to experience an adverse event while receiving hospital care in high-income countries. Conversely, the estimate for low- and middle-income countries (LMICs) suggests that up to 1 in 4 patients are subject to an adverse patient safety event.

The PAHO Latin American Study of Adverse Events (IBEAS) reported that up to 20% of patients experience at least one harmful incident during their hospitalization (2). Additionally, the study acknowledged that more than half of these harmful incidents could have been avoided. In Mexico, patient safety is a relatively new subject and to date, there has been little action to embed patient safety culture in the healthcare practice in Mexico (3). Recent reports have highlighted the need for improvements in the safe service provision and delivery of healthcare in Mexican hospitals. According to the OECD, Mexico's health system must change to deliver people-centred, higher-quality safe and effective care across public and private Mexican healthcare providers (4). There is a need for better understanding and subsequent design of working practices, environments and culture in the Mexican healthcare system. This need for safer, better working and service provision is inclusive of multiple stakeholders in addition to patients. There is evidence concerning the need for improved conditions for better healthcare staff physical and mental wellbeing (5-6) which in and of itself will contribute to better patient safety.

In response to these needs, a Human Factors/ Ergonomics (HFE) research project emerged from a collaboration between a research team of the Human Factors Research Group at the University of Nottingham, the Ergonomics Research Centre (ERC) at the Universidad de Guadalajara and the Hospital Civil de Guadalajara (HCG). This pioneering study was conceived by collaborating research teams in UK and Mexico to understand the challenges experienced within a public hospital in Guadalajara, Mexico in regards to staff and patient safety and wellbeing.

This project had multiple aims,

- To understand staff experiences, needs and challenges to patient safety within HCG.
- To train a range of HCG stakeholders in HFE principles and systems thinking in regards to patient safety.

These aims were achieved through interactive focus groups and a safety culture survey. This approach was underpinned by the importance of top down and bottom up data gathering from different hospital staff groups, ranging from frontline clinical and non-clinical staff to senior management (6). Capturing data from diverse staff groups ensured equity of perspectives within the understanding of patient safety challenges.

The research team in Mexico has successfully communicated the value of applied HFE to strategic stakeholders at the HCG, specifically Quality Management and the International Liaison Departments. This has resulted in invited talks on the topic of healthcare HFE and networking at the annual hospital congress to enable ongoing dialogue with the healthcare community in the locality.

This ongoing partnership has elicited some memorandums of understanding (MoU) between institutions, providing a framework to support collaborative working, including further research and teaching and training activities. The MoUs with the HCG are particularly significant due to its regional reputation as the biggest hospital in Latin America to serve people without social security.

The research project enabled the delivery of workshops introducing and providing introductory HFE education to 44 staff at the HCG. The workshop utilises content from and builds on a course accredited by the Chartered Institute of Ergonomics and Human Factors (CIEHF) (8). In addition to education, the workshops elicited data regarding safety priorities of hospital staff to feed into the research agenda (9). It was important that workshop attendees felt able to disclose their experiences of work and so the independence of the research team was believed to be a key facilitator in accessing real lived experiences. Attendees were provided opportunity to reflect on their own safety and wellbeing and their needs as workers, prior to considering their perceptions of safety challenges in regards to patients and the wider system. To reach audiences from different healthcare providers, the workshop was delivered twice at the International Conference of Advances in Medicine (CIAM 2019 & 2020). Following the workshops, an initiative has been launched within HCG to develop a team of "Ergonomics Ambassadors" whereby workshop participants have been given optional additional education in the HFE method of Hierarchical Task Analysis, upskilling in-house staff in a specific but universally useful method.

To date forty-one 'HCG Ergonomics Ambassadors' have been able to attend this additional training'. Together the HFE research team with the support and help of the Quality Management team at the HCG have made it a priority that access to these training opportunities is offered democratically, to a range of hospital staff to optimise spread and reach of this new knowledge within the hospital. The current scheme has enabled hospital staff from different backgrounds to attend these courses, e.g. clinical and nursing staff, laundry and portering leads, allied health personnel such as nutritionists and psychologists, indicating commitment into upskilling workers in HFE from a range of clinical and non-clinical professions. This is now an ongoing scheme between UdG and HCG, with both parties exploring ways to ensure sustainability and growth of the Ergonomics Ambassadors scheme to support better, sustainable systems of work.

This is in addition to the wider research team continually assessing the ongoing impact of this training and where, how and why it is and will support the development of a wider patient safety agenda in Mexico.

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