IMIA Human Factors Engineering for Healthcare Informatics - IMIA WG 11 2020 Report

presented as part of the IMIA VP WG & SIGs report:
- IMIA Board Meeting, November 22, 2020,
- IMIA General Assembly Meeting, December 6, 2020

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Website: https://imia-medinfo.org/wp/human-factors-engineering-for-healthcare-informatics/

For the 2020 report please provide details on the following:
(Due to the COVID -19 pandemic, IMIA acknowledges that many functions were cancelled, delayed and disrupted from January 2020 to the end of June 2020)

1. Background of the Human Factors Engineering for Healthcare Informatics Working group

Mission: This HFE4HI working group explores methods for studying the human computer interaction in health, including optimal interface designs for health informatics software, to make the computer a welcome partner with both the clinician and the patient in empowered longitudinal care. It is our mission to enhance awareness, disseminate knowledge and build on rigorous scientific human factor principles for (re)design and evaluation of health technology to improve its efficiency, acceptability and safety.

Vision: Our vision encompasses that human factors are considered into e-health projects as a mandatory and integral part of design and evaluation practices to enhance acceptability and suitability of e-health in healthcare. By studying methods and techniques devoted to human factors in the field of biomedical informatics, this working group will accumulate and analyze knowledge on human factors practices to contribute to the development, enhancement, and dissemination of scientific knowledge and practices in this field.

Objective: The objective of this working group is to coordinate studies and actions in this domain and to develop standardization initiatives for usability studies and user-centered design in the healthcare domain. We thereby explore state of the art methods, models, innovations and results to create standards for the use of human factors engineering and usability testing in health. Our final objective is to build and maintain a registry of HFE and Usability studies.
2. Achievements

HFE4HI WG project: Challenges of HFE studies IRB approval

In conducting Human and Organizational Factor (HOF) studies, we have reached out to our members in 2020 to start a new global initiative together with IMIA’s “organizational and social issues” working group and the European federation for medical informatics’ (EFMI) “human and organizational factors of medical informatics” working group to improve on information provision surrounding Institutional Review Board (IRB) approval. HOF studies in health technology involve human beings and thus involve Institutional Review Board (IRB) constraints and methods that may not fit standard regulations and IRB practices. Members from our working group from seven European countries, Argentina, Canada, Australia, and the United States answered the call. Four themes emerged that indicate shared challenges in legislation, IRB inefficiencies and inconsistencies, general regulation and costs, and lack of HOF study knowledge by IRB members. We have proposed a model for IRB review of HOF studies based on best practices and are currently working on the next steps for further refinement and dissemination of this model to promote and support the performance of IRB assessment of user centered design research of health information technology. The primary objective of this model is to promote the performance of these studies in a way that respects the participants’ integrity without undermining the innovation and the responsiveness of research teams, a prerequisite for coping with fast-spreading pandemics such as that of COVID-19.


HFE4HI WG project: Global analysis of Human and Organizational Factors of the Covid-19 applications.

Due to COVID-19, the uptake and use of interactive health technology by healthcare professionals and citizens has taken a flight forward. With regard to human factors research for healthcare informatics, we have started a global research on the design aspects and acceptation factors of the official applications that have been introduced to monitor and mitigate the outbreaks of the COVID-19 pandemic. We have developed a research protocol with Human Factor research organizations in the Netherlands and together with the Clinical Investigation Center for Innovative Technologies in Lille have started the first feedback round from our members for input into the research protocol. We aim to perform the research globally and compare lessons learned, challenges and perspectives on Human factors issues, specifically user experiences of
the interactive health information apps that monitor, track and communicate information on people’s health(risks) and decease spreading. The report will be sent for publication in March 2021.


This response will serve as the basis for a position paper on the roles and perspectives of human and organizational factors in patient safety.

Joint contribution of IMIA working groups

The HFE4HI WG contributed to the IMIA working groups joint contribution to the paper from the IMIA VP, Luis Fernández Luque: Evidence-based health informatics as the foundation for the COVID-19 response: a joint call for action to transform hopes and hypes into realities. This paper will be sent for publication in November 2020.

3. Engagement and participation

Pre-MedInfo conference: Context Sensitive Health Informatics 2019 – CSHI 2019

The HFE4HI working group organized and promoted the conference CSHI 2019, together with IMIA’s “organizational and social issues” working group and the European federation for medical informatics’ (EFMI) “human and organizational factors of medical informatics” working group. This conference has been held in Lille University, August 23rd and 24th 2019 (France). The theme of the conference was "Sustainability in dynamics ecosystems". Two keynote speakers were invited: Dr. Pascale Carayon from Wisconsin-Madison University and Dr. Tommaso Bellandi from Northwest Trust of the Tuscany’s Health Service, Italy.

The conference was a great success with more than 60 participants from all over the world. During two days, participants had the opportunity to attend high-quality presentations and to exchange views on current research on organizational and human factors in the field of medical informatics. It was also an opportunity to strengthen existing relationships between different
research groups and to create dynamics to develop common projects. The conference proceedings are available open access: \url{http://ebooks.iospress.nl/volume/context-sensitive-health-informatics-sustainability-in-dynamic-ecosystems}


**Working group meeting at MedInfo 2019**

The working group meeting during MedInfo 2019 presented the last achievements and perspectives of the group and explored expectations of the present members. A dozen of members were present. The main expectations that emerged from the discussions were: the establishment of a mailing list, the creation of a LinkedIn account, the development of the framework and technical infrastructure to create and disseminate educational videos on human factors in medical informatics, the creation of a newsletter informing about the publications of the group members. The LinkedIn account has been created. Other ideas are under development.

**Panels**

- **MedInfo 2019:** McCoy AB, Wright A, Marcilly R, Magrabi F (2019) Electronic Health Record Safety: Practical Strategies for Evaluation and Improvement across Key Risk Areas, panel presented at MedInfo 2019, Lyon, France

- **MIE 2020:** Marcilly R, Kuziemsky C, Nøhr C, Peute LW, Lichtner V (2020) Ethics Reviews and Human and Organizational Factors’ Research in European Countries, panel accepted at MIE 2020, Geneva, Switzerland (conference cancelled)

**Preparation of the Context Sensitive Health Informatics (CSHI) – 2021 conference**

The HFE4HI working group is organizing the pre-Medinfo conference CSHI 2021, together with IMIA’s “organizational and social issues” working group and the European federation for medical informatics’ (EFMI) “human and organizational factors of medical informatics” working group. Initially, this conference should have been held in Sydney, Australia. However, due to the current health context and its uncertain evolution, it will be an online event in August 2021, preferably in conjunction with MedInfo 2021.

Context Sensitive Health Informatics is about health information technologies and their environments. Environments may be people in different roles such as users, designers, and evaluators, but also non-human constructs such as organizations, work practices, guidelines and protocols, buildings, and markets.

The conference theme is: “The Role of Informatics in Global Pandemics”. The COVID-19 pandemic was a major disruption to health care. It required innovations in health informatics that can bridge time and space to provide timely care. Managing this epidemic requires, at a macroscopic level, an infrastructure to support healthcare management of populations; at a
more microscopic level, it requires putting in place the necessary supports to deliver care in time. COVID-19 forced states and health organizations to make decisions and reorganize care in a rapid manner. However, it also demonstrated the need for evidence to design and implement health technologies. How do we reconcile the face pace needed to respond to an epidemic with the time needed to build evidence on the deliverance of informatics tools while also ensuring the quality and safety of such tools?

4. Recruitment and engagement activities

The working group organizes panels and, when possible, makes itself visible through the organization of group meetings at major international conferences in medical informatics (e.g. MedInfo, MIE, AMIA, ITCH etc.). A mailing list and a LinkedIn group have been created to start with more direct communication lines with our members and in 2019 we have started global research projects in HFE which will be published as IMIA Working group’s research contributions. This communication allows the structuring of the group around a project (see above) which, in turn, also makes the group visible and strengthens it.

Current number of members:

35

List of WG/SIG members:


Please note that not all members have the same level of involvement in the group. Some are active and others are observing. Their level of involvement changes over time.