



Sheffield Hallam University's *Lab4Living* presents

Design4Health2024

International Conference

equilibrium

in a time of

permacrisis

25–27 June 2024

Conference Abstracts
Volume 6: Abstracts 140-161



www.lab4living.org.uk | [@design4health](https://twitter.com/design4health) | [#D4H2024](https://twitter.com/D4H2024)



Sheffield Hallam University's *Lab4Living* presents

Design4Health2024

International Conference

Design4Health 2024

Editors: Claire Craig, Paul Chamberlain

With thanks to Helen Fisher and Cassie Khoo

Proceedings of the 7th International Conference on Design4Health

Sheffield, United Kingdom, 25th-27th June 2024

Lab4Living, Sheffield Hallam University

Welcome to the 7th International Design4Health Conference.

We continue to live in a time of unprecedented change. Since Design4Health2018, we have experienced a global pandemic, been confronted by economic uncertainty, witnessed climate change's devastating impact, and continue to experience societal inequality. Advances in AI and other technologies, whilst promising new opportunities, also raise ethical challenges.

It seemed only fitting that this was reflected in the overarching theme of our 2024 conference – hence our title: **equilibrium in a time of permacrisis**.

The term Permacrisis describes an extended period of instability. We thought it reflected well recent events and the global challenges we continue to face. We also felt it important to recognise that history has shown how new ways of thinking can be borne during periods of instability and insecurity. This book of abstracts reflects the richness and breadth of research that is occurring in responding to these global challenges and the uncertainty they bring.

Authors have responded in different ways to the theme and in the way they have chosen to write and present their abstracts reflects a diversity of styles and approaches. We are excited to hear more over the coming days as work is presented and shared.

Above all we hope the 2024 conference will offer space to pause, reflect and examine how design research and creative practice might enable us to envision alternative futures as we move forward to consider a new equilibrium.

Thank you

Conferences are borne out of huge amounts of work that happen behind the scenes and this year's conference is no different. Kirsty Christer who had been so instrumental in organising previous conferences has passed the baton on to Julie Roe who has worked tirelessly over the last few months in the planning of the conference.

Special thanks to Nick Dulake, Ursula Ankeny and Helen Fisher for all their work in pulling everything together and to the wider Lab4Living team.

We are also indebted to our conference organising committee who have been with us from the start of this process. Thanks to:

Kirsty Christer – Conference Co-ordinator, Lab4Living
Nick Dulake – Lab4Living
Cassie Khoo – Good Health Design, AUT, New Zealand
Kaisu Koski – Lab4Living
Joe Langley – Lab4Living
Chris Lim – University of Dundee
Ivana Nakarada-Kordic – Good Health Design, AUT, New Zealand
Graham Nesbitt – Lab4Living
Steve Reay – Good Health Design, AUT, New Zealand
Heath Reed – Lab4Living
Julie Roe – Lab4Living
Noémie Soula – Lab4Living
Michael Tan – Lab4Living

Thank you to our sponsors Lightmain and Research England.

Thank you to all our reviewers on our scientific committee for their support in reading and commenting on the huge volume of abstracts we received.

Aaron Davis	Kaisu Koski	Caylee Raber
Bill Noble	Kirsty Christer	Chris Lim
Daniel Masterson	Kate Sellen	Sarah Munce
Erna Snelgrove-Clarke	Michael Tan	Sarah Walker
Gillian Harvey	Marika Grasso	Smizz
Helen Fisher	Marney Walker	Stephen Reay
Ian Gwilt	Nick Dulake	Ursula Ankeny
Ivana Nakarada-Kordic	Noemie Soula	Virginia Dickson-Swift
Joe Langley	Nadia Beyzaei	
Juliana Privitera	Nicola Kayes	

And finally thank-you for being willing to share your work, to enter into conversation and discussion, for your energy and passion in advancing the role of design and creative practice in the promotion of health and wellbeing. We hope you enjoy the conference.

Warmest wishes,
Professor Claire Craig and Professor Paul Chamberlain,
Lab4Living, Sheffield. UK

140. Co-designing a monitoring system to support patient safety in emergency care

[Sandra Neves ORCID iD](#), [Maria Pedro Guarino ORCID iD](#)

Polytechnic University of Leiria, Leiria, Portugal

Themes

Technologies in health, Methods, Contexts of care

Keywords

Co-design research, Healthcare professionals' engagement, emergency care, prototyping, patient monitoring system

Submission type

Paper presentation

Abstract

Going to a hospital can be a stressful and anxious experience for many patients, particularly those needing emergency care. These individuals are more likely to wait long hours to be treated, admitted, or discharged. Portuguese emergency departments (EDs) are struggling to treat patients quickly and safely due to the increased number of patients going into Eds (Brazão et al. 2016). This situation highlights concerns about patients' safety issues and their implications for timely detection of clinical deterioration in patients during their waiting times in EDs. Identifying signs of clinical deterioration at the earliest stages can allow for prompt intervention that can significantly impact on patient outcomes, especially in emergency care settings where patients' health conditions can deteriorate quickly. However, the available resources are limited, and innovative approaches to support clinical practice are required.

This abstract presents a case study of a participatory co-design approach to develop, a patient clinical deterioration alert system, focused on the Portuguese ED ecosystem. Research focused on understanding patient safety risks in ED has highlighted that emergency department ward staff (EDWS) should be involved in identifying strategies to facilitate patient safety during emergency care (Källberg et al. 2017). Involving EDWS is specifically important when designing healthcare services and systems improvements that impact clinical practice. This showed the need to engage EDWS and patients' representatives who recently discharged from an ED in hospital in Portugal to ensure their needs, preferences, and experiences are incorporated in the design of the new system.

Participatory and co-design methods were used to engage EDWS and patients' representatives in the development of the new patient monitoring system to alert clinical deterioration in the ED. This study is part of a 2-year funded project SAFETRACK involving a multidisciplinary team of academic experts in health, informatics, electronic engineering, and companies in software development, medical devices, and commercial medical solutions to explore how ED in hospital can better respond to patient safety issues. We will share our experience of using co-designing to develop the new patient monitoring system, SAFETRACK, and supporting the iterative prototyping of two integrated components: the sensor capsule

and the digital interface. Although this study engaged key stakeholders to collaboratively rethink the issue of patient monitoring in ED in hospital, we found some practical and cultural considerations that makes a participatory and collaborative approach quite challenging in this context of emergency care. Engaging EDWS in design required researchers to engage in ethical protocols in hospital, meeting the emergency management team several times to ensure trustworthiness, adaptability, and flexibility to the healthcare professional burden agendas. However, participating in this study was acknowledged as an opportunity to be more reflective about daily clinical practices in a space where people can voice their opinions and ideas without facing criticism or judgment and objectively addresses the needs of the participants. We will present barriers, and facilitators that arose during the participatory co-design process with healthcare institutions and the multidisciplinary SAFETRACK team, as well as the new patient monitoring system envisioned by the healthcare professionals in the design process. The participatory co-design approach led to a better understanding of the current and future challenges in patient monitoring in hospital ED.

Acknowledgments:

This work was funded by CENTRO-01-0247-FEDER-070111 and national funds provided by FCT – Fundação para a Ciência e Tecnologia, I.P. (UI/05704/2020). The researchers (authors) are supported by CEECINST/00051/2018.