

# HEPS

## HEALTHCARE SYSTEMS ERGONOMICS AND PATIENT SAFETY 2022 @ TU DELFT

### CONFERENCE PROGRAM (draft version\*)

November 2-4 2022

Conference location: [X TU Delft](#), Mekelweg 8, 2628 CD Delft, The Netherlands

Conference website: [www.heps2022.com](http://www.heps2022.com)

\*Please note: some changes may still be made in titles and order of presentations within sessions.  
Use the search tool to search on name, session or presentation.

TUESDAY NOVEMBER 1	
17.30-19.00	Welcome drinks & registration, ID Kafee, Faculty of Industrial Design Engineering

  

WEDNESDAY NOVEMBER 2	
8.45-9.15	Registration
9.15-10.30	Plenary session Opening and keynotes by Barbara Barry (Mayo Clinic, USA) and Richard Goossens (TU Delft, NL)
10.30-11.00	Break
11.00-12.30	Parallel sessions
	<p><b>1. Value-Based Healthcare – the movement towards outcome measurement based on what matters to patients</b> (EC8) Chair: Nina Zipfel, Amsterdam UMC, The Netherlands</p> <p>1.1 (61) An outcome-based mapping approach to facilitate participation and negotiation among multiple stakeholders - Irma Cecilia Landa Avila, Gyuchan Thomas Jun, Carolina Escobar-Tello and Rebecca Cain</p> <p>1.2 (58) Value-Based HealthCare in the Consultation Room: a Delphi and Group Concept Mapping study - Veerle van Engen, Martina Buljac, Igna Bonfrer and Kees Ahaus</p> <p>1.3 (18) Analysing the level of and designing interventions for child participation at a Dutch paediatric hospital by combining health management and industrial design - Tessel van Dijk, Kasia Tabeau, Marie-Claire de Wit and Marie-Lise van Veelen</p> <p>1.4 (9) Applying the concept of value-based health care in insurance medicine: opportunities and challenges - Marije Hagendijk, Nina Zipfel, Jan Hoving, Marijke Melles, Carel Hulshof, Philip van der Wees and Sylvia van der Burg-Vermeulen</p> <p>1.5 (27) Team Cognition as a Lens to Evaluate Handoff Communication - Abigail Wooldridge and Emma Mayes</p>
	<p><b>2. Surgical ergonomics &amp; product design</b> Chair: tbd</p> <p>2.1 (72) Can an ergonomic laparoscopic device with 360 degrees of freedom reduce surgeons' muscular load? - Tina Dalager, Jeppe Frost, Henrik Baare Olsen and Karen Sogaard</p> <p>2.2 (6) Experimental investigation of anthropomorphic forms of a forearm support of a surgical arm assistance system in precision tasks - Ferdinand Langer and Thomas Maier</p> <p>2.3 (2) Using inflatable cushions is significantly less straining than manually proning patients - Stephan Tomlow, Tom Geens, Ellen Suy and Filip Buckens</p> <p>2.4 (101) Effects of intraoperative flow disruptions on provider and patient outcomes: A single-center observation study in robot-assisted surgery - Amelie Koch, Ken Catchpole and Matthias Weigl</p> <p>2.5 (84) Surgical Ergonomics: Measurement of intraoperative workload and creation of interventions - Susan Hallbeck</p> <p>2.6 (68) Preventive initiatives are urgently needed – A survey documents high prevalence of pain among Danish Dental Care workers - Jesper Stejnicher Drongstrup Jensen, Tina Dalager and Karen Sogaard</p>

	<p><b>3. Medication safety from the perspective of human factors: How to design safer systems for protecting patients and workers?</b></p> <p>Chairs: Angela Caro-Rojas, Pontificia Universidad Javeriana, Colombia, Brian Edwards, Pharmaceutical Human Factors Group, CIEHF, UK, Julie Avery, CIEHF, UK, Carlos Aceves-González, Universidad de Guadalajara, Mexico</p> <p>3.1 (19) A unique international collaboration between pharmacovigilance and human factors communities - Brian Edwards</p> <p>3.2 (14) Using cognitive ergonomics and metacognition processes for understanding and improving Medication Safety systems - Angela Caro-Rojas</p> <p>3.3 (34) Work system analysis to explore the medicines management process in the nursing home setting in Ireland: A qualitative study using the Systems Engineering Initiative for Patient Safety model - Asil Sadeq, Claire Noonan, Sean Kennelly, Deirdre Shanagher, Karla Walsh, Cristin Ryan and Tamasine Grimes</p> <p>3.4 (44) Qualitative assessment of a new labelling design of injectable generic medicines - Carlos Aceves-González, Angela Caro-Rojas, John A. Rey-Galindo, Adriana Aristizábal-Ruiz and Karen Hernández-Cruz</p> <p>3.5 (48) Generating design guidelines for alternative medication management tools from medical cannabis patients - Enid Montague, Douglas Bruce, Elissa Foster, Vanya Sharma and Olaye Adelakun</p> <p>3.6 (43) Association between contributing system factors and medication-related incidents reported in a Mexican tertiary pediatric hospital - Vanessa Karina Martínez-Lara, Jessica Liliana Vargas-Neri, Lucía Méndez-Sánchez, Patricia Clark, Heriberto Gómez-Gaytán, Miriam Herrera-Segura and Carlos Aceves-González</p>
12.30-13.30	Lunch
13.30-15.00	Parallel sessions
	<p><b>4. Workforce safety and wellbeing as a driver for healthcare safety and quality: Convergence of human factors, workforce management, and safety management science (EC7)</b></p> <p>Chairs: Linsey M. Steege, PhD, University of Wisconsin-Madison School of Nursing, USA, Chiara Dall'ora, RN, University of Southampton, UK</p> <p>4.1 (92) When a patient falls: converging factors in preventing worker injury - Louise Whitby, Craig McLachlan and Hassan Assareh</p> <p>4.2 (38) Patient handling: ergonomic risk assessment guided by MAPO tool - Angélica Juns and Natalia Braga</p> <p>4.3 (73) A Multi-Professional Approach to Investigating Musculoskeletal Injuries Among Medical Radiation Technologists: A Case Study for New Equipment - Anita Jogia, Jean-Pierre Brunet, Kayley Perfetto, Greg Leblanc, Jerry Plastino, Jill Smith and Amanda Stuyt</p> <p>4.4 (67) Human Computer Interaction (HCI) in General Radiography (x-ray): A Case Study to Consider HCI factors when purchasing x-ray Equipment - Anita Jogia, Luigi Di Raimo, Julia Lintack, Dann Ramos, Jill Smith, Jeanpierre Brunet, Narinder Paul, Derek Lall, Michael Sharpe, Sherri Cheadle, Karen Rowe and Ryan Macdonald</p> <p>4.5 (57) Impacts of a shared sensemaking on clinical decision-making in Intensive Care Unit (ICU) - Lise Boudreault and Philippe Doyon-Poulin</p>
	<p><b>5. Digital Health: Artificial Intelligence</b></p> <p>Chair: tbd</p> <p>5.1 (36) Accountable risk management in healthcare during the COVID-19 pandemic; the role of STSA and AI - Nick McDonald, Marie Ward, Lucy McKenna, Rebecca Vining, Julio Hernandez, Brian Doyle, Una Geary, John Guilfoyle, Arwa Shuhaiber and Rob Brennan</p> <p>5.2 (100) Effects of an AI-based software on clinical workflow and clinician outcomes: A prospective study in radiological imaging - Katharina Wenderott, Nikoloz Gambashidze, Julian Luetkens and Matthias Weigl</p> <p>5.3 (78) A participatory systems approach to the development of human-centred AI in healthcare: a framework for developing an AI analytics-based care supports for/with people with intellectual disabilities (ID) and multiple long-term conditions (MLTC) - Gyuchan Thomas Jun, Satheesh Gangadharan, Panagiotis Balatsoukas, Rohit Shankar, Michelle O'Reilly, Neil Sinclair, Cecilia Landa-Avila, Georgina Cosma, Vasa Curcin, Chris Kniffon, Francesco Zaccardi, Ashley Akbari and Reza Kiani</p> <p>5.4 (35) Integration of co-production processes in implementation of Artificial Intelligence in Health Care Practice: A research program - Petra Svedberg and Jens Nygren</p> <p>5.5 (46) The implementation of AI in healthcare – implications for professional boundaries and different forms of boundary work - Lena Petersson, Ingrid Larsson, Jens M Nygren and Petra Svedberg</p> <p>5.6 (83) Cognitive Work Analysis of the novel use of shopping loyalty card data in medical decision making - Alexandra Lang, Elizabeth Dolan, James Goulding and Laila Tata</p>
	<p><b>6. Informal care &amp; care givers</b></p> <p>Chair: tbd</p> <p>6.1 (26) Understanding the contextual factors that influence the use of technological interventions supporting caregivers of persons living with dementia - Shanmugapriya Loganathar, Mehak Oberoi, Christian Elliott, Matthew Zuraw and Nicole E. Werner</p> <p>6.2 (10) Care partner's experience with care received in the Emergency Department - Peter Hoonakker, Pascale Carayon, Kathryn Wust, Rachel Rutkowski, Paula Dail, Sheryl Anne Krause and Nicole Werner</p>

	<p>6.3 (16) Exploring work system barriers and facilitators and family-generated strategies in caring for children with tracheostomies - Hanna J. Barton, Brittney DeBoer, Shanmugapriya Loganathar, Nadia Douthcheva, Mary L. Ehlenbach, Barbara Katz, Ryan J. Coller and Nicole E. Werner</p> <p>6.4 (37) The use of photo/video data to explore laypeople's household medication management: a realist synthesis to explore methodological, practical and ethical considerations - Tamasine Grimes and Romaric Marcilly</p>
15.00-15.30	Break
15.30-17.00	Parallel sessions
	<p><b>7. Poster session</b> (will be offered twice during the conference; also on Thursday afternoon) Chair: tbd</p> <p>7.1 (7) Behavioural and systems change in Nursing Homes with an integrated training intervention - Giulia Lefosse, Tommaso Bellandi, Laura Rasero and Yari Longobucco</p> <p>7.2 (24) Comparing the rotation calculations of finger joints: vectors versus local coordinate systems of finger segments - Tianyun Yuan, Yu Song, Gerald A. Kraan and Richard Goossens</p> <p>7.3 (25) A conceptual framework for the operationalization of the capacity of public and universal health systems for resilient performance - Alessandro Jatobá</p> <p>7.4 (51) Prediction of Nursing Burnout – a Scoping Review of the Literature from 1980 to 2019 - Carolina Carvalho Manhães Leite and Abigail R. Wooldridge</p> <p>7.5 (88) Continuous assessment of clinical escalation protocol performance using a data-driven dashboard - Davy van de Sande, Gerrie Prins-Van Gilst, Michel E. van Genderen, Joost Huiskens, Diederik Gommers and Jasper van Bommel</p> <p>7.6 (90) Designing for resilient sociotechnical systems: Two tools to make care safer for patients - Elizabeth Austin, Brette Blakely, Paul Salmon, Jeffrey Braithwaite, Rebecca Mitchell and Robyn Clay-Williams</p>
	<p><b>8. Intelligence in restorative environments</b> Chair: Elif Ozcan Vieira - Delft University of Technology, The Netherlands</p> <p>8.1 (54). From traumatic to therapeutic: patients' experiences in the Intensive Care Unit - Chan Mi Kim, Thomas J L van Rompay, Esther M van der Heide, Gijsbertus J Verkerke and Geke D S Ludden</p> <p>8.2 (70). Defining environmental intelligence in critical care: A case study on cause-effect in paediatric patient experiences - Elif Ozcan and Jan Willem Kuiper</p> <p>8.3 (85). Sound, Music / Health relations – The PsySon project and the “music-caregiver interview” - Nicolas Misdariis, Francois Kerforn, William Petitpierre, Olivier Houix and Roland Cahen</p> <p>8.4 (87). Experienced ICU Sounds: a mixed-methods study into the lived experience of the critically ill patients' sound environment - Gijs Louwers, Elif Özcan, Diederik Gommers and Sylvia Pont</p>
	<p><b>9. Patient well-being, experience &amp; empowerment</b> Chair: tbd</p> <p>9.1 (60) The effect of psychological scarcity on health decisions of rural residents in China: preliminary results - Haiou Zhu, E Liu, Fangzhou You, Marijke Melles, Thorsten Gruber, Hua Dong and Cees de Bont</p> <p>9.2 (11) Co-creation of risk visualizations for personalized breast cancer screening - Inge van Strien, Hannah Babetti, Laura Schrauwen, Marijke Melles, Danielle Timmermans and Olga Damman</p> <p>9.3 (17) Patient and clinician perspectives on collaborative work in the emergency department - Kathryn Wust, Hanna Barton, Nicole Werner, Rachel Rutkowski, Peter Hoonakker, Manish N. Shah, Brian Patterson, Michael S. Pulia, Denise Buckley, Maureen Smith, Barb King, Paula Vw. Dail and Pascale Carayon</p> <p>9.4 (91) Impact of chronic disease on healthcare use and academic performance among young people - Rebecca Mitchell, Anne McMaugh, Geoffrey Herkes, Nusrat Homaria, Tien-Ming Hng, Cate Cameron and Reidar Lystad</p> <p>9.5 (8) Work-focused healthcare for people with cardiovascular disease: a qualitative study exploring what matters to the client and identifying opportunities of improvement using client experience journey mapping - Marije Hagendijk, Nina Zipfel, Jan Hoving, Marijke Melles, Carel Hulshof, Philip van der Wees, Ersen Colkesen and Sylvia Van der Burg-Vermeulen</p> <p>9.6 (71) Mapping physical activity behavior of people with a physical demanding job and contextual factors influencing it – directions for targeted lifestyle interventions - Julia Beckmann, Jos Kraal, Pieter Coenen, Erwin Speklé and Natalia Romero Herrera</p>
15.30-17.00	WHO review session (by invitation only)
17.30-18.30	TC Healthcare Ergonomics (for everyone who is interested in the activities of the IEA's Technical Committee Healthcare Ergonomics)

THURSDAY NOVEMBER 3	
8.30-9.00	Yoga – instructor Johan Molenbroek
9.15-10.30	Plenary session Keynote by Melissa Baysari (University of Sydney, Australia) & Project March (TU Delft)
10.30-11.00	Break
11.00-12.30	Parallel sessions
	<p><b>10. Design towards a more sustainable healthcare system</b> Chairs: Dr. ir. Jan Carel Diehl (Delft University of Technology – Design for Sustainability) &amp; Dr. Nicole Hunfeld (Erasmus University Medical Center – Intensive Care Unit), The Netherlands</p> <p>10.1 (65). Going green: Waste collection and analyses in pediatric intensive care - Suzan Cochius den Otter, Margot Honkoop, Lisanne van den Berg, Alicia Ville, Nicole Hunfeld, Jan-Carel Diehl, Ulrike Kraemer and Sascha Verbruggen</p> <p>10.2 (49). Towards greener ICUs: Redesigning the use of disposable gloves - Lisanne van den Berg, Armağan Albayrak, Nicole Hunfeld and Jan Carel Diehl</p> <p>10.3 (47). Reducing the environmental impact of syringes on the Intensive Care Unit - Margot Honkoop, Armağan Albayrak, Ruud Balkenende, Nicole Hunfeld and Jan Carel Diehl</p> <p>10.4 (77). Towards Circular ICUs: Circular intubations as a catalyser for systemic change - Alicia Ville, Nicole Hunfeld, Baptiste Sene, Conny Bakker and Jan Carel Diehl</p>
	<p><b>11. From white paper to learning pathway: Progress and challenges in professionalising human factors in UK healthcare</b> Chair: Sue Hignett, Loughborough University, UK Overview of Learning Pathway (Hignett, Jun, Fray)</p> <p>11.1 (95). From White Paper to Learning Pathway: Progress and Plans in Scotland - Paul Bowie, Helen Vosper and Sue Hignett</p> <p>11.2 (29). Bringing HFE education and training closer to healthcare systems: the case of a Latin American network of practitioners and academics - Irma C. Landa-Avila and Carlos Aceves-González</p> <p>11.3 (52). From seeing HFE to doing HFE: My Journey onto the Learning Pathway, a Personal Reflection - Saydia Razak</p> <p>Discussion</p>
	<p><b>12. Healthcare professionals: workflow, training, resilience</b></p> <p>12.1 (56) Resilience and Adaptive Capacity in Hospital Teams in England - Natalie Sanford, Gabriel Reedy, Anne Marie Rafferty and Janet Anderson</p> <p>12.2 (20) Multiple perspectives about a team-based OR-to-ICU handoff protocol - Bat-Zion Hose, Julian Conn Busch, Meghan Lane-Fall and Ellen Bass</p> <p>12.3 (15) Socio-technical systems analysis of the barriers to multidisciplinary medical ward rounding in a large acute teaching hospital - Marie Elizabeth Ward, Barry Kennedy, Cormac Kennedy, Susie O'Callaghan, Declan Byrne and Una Geary</p> <p>12.4 (23) A Human Factors Approach to Aggregated Analysis of Sentinel Events: A Retrospective cross-sectional review of SE-reports from Dutch general Hospitals - Mees Baartmans, Steffie Van Schoten, Bert Smit and Cordula Wagner</p> <p>12.5 (39) Patient vehicle extrication at the entry door of an emergency care: an analysis of nursing activity - Angélica Juns and Clarissa Silva</p> <p>12.6 (4) CRM WARS – Storytelling as an unconventional approach to teaching the relevance of human factors in healthcare - Oliver Happel, Monika Berberich and Michael Brill</p>
12.30-13.30	Lunch
13.30-15.00	Parallel sessions
	<p><b>7. Poster session</b> (will be offered twice during the conference; also on Wednesday afternoon) Chair: tbd</p> <p>7.1 (7) Behavioural and systems change in Nursing Homes with an integrated training intervention - Giulia Lefosse, Tommaso Bellandi, Laura Rasero and Yari Longobucco</p> <p>7.2 (24) Comparing the rotation calculations of finger joints: vectors versus local coordinate systems of finger segments - Tianyun Yuan, Yu Song, Gerald A. Kraan and Richard Goossens</p> <p>7.3 (25) A conceptual framework for the operationalization of the capacity of public and universal health systems for resilient performance - Alessandro Jatobá</p> <p>7.4 (51) Prediction of Nursing Burnout – a Scoping Review of the Literature from 1980 to 2019 - Carolina Carvalho Manhães Leite and Abigail R. Wooldridge</p> <p>7.5 (88) Continuous assessment of clinical escalation protocol performance using a data-driven dashboard - Davy van de Sande, Gerrie Prins-Van Gilst, Michel E. van Genderen, Joost Huiskens, Diederik Gommers and Jasper van Bommel</p> <p>7.6 (90) Designing for resilient sociotechnical systems: Two tools to make care safer for patients - Elizabeth Austin, Brette Blakely, Paul Salmon, Jeffrey Braithwaite, Rebecca Mitchell and Robyn Clay-Williams</p>

	<p><b>13. RESPOND - An action research approach to improving surgical outcomes using HF interventions</b> Chair: Peter McCulloch &amp; Claudia Grimaldo</p> <p>13.1 (74) Collaborative Design and Development of Patient Involvement Intervention to Improve Responses to Deterioration and Decrease Failure to Rescue in Surgical Patients - Mudathir Ibrahim, Leslie Booth, Elizabeth Sutton, Mark Suján, Saydia Razak, Abhishek Dey, Andile Dube, Laurie Earl and Peter McCulloch</p> <p>13.2 (76) A Team is More than a Group of Individuals - “like strings that twist together into a rope” (Dan Carter): Lessons Learned from Elite Sports and The Military to Improve Teamwork and Culture in Surgical Teams - Laurie Earl, Max Stewart, Mudathir Ibrahim, Joanne Kitchin and Peter McCulloch</p> <p>13.3 (80) Design and Development of RESPOND Games League: Can gamifying team building process be an effective strategy to improve performance of a surgical team - Abhishek Dey, Laurie Earl, Mudathir Ibrahim, Saydia Razak, Andile Dube, Lesley Booth, Elizabeth Sutton, Mark Suján and Peter McCulloch</p> <p>13.4 (79) The Respond Study: Introducing Resilient Operating Procedures to reduce Failure to Rescue rates - Saydia Razak, Mark Suján and Peter McCulloch</p> <p>13.5 (81) The Shared Language Tool: An Intervention to enhance shared ownership with service departments in rescue pathways for acutely deteriorating patients - Andile Dube and Peter McCulloch</p>
	<p><b>14. The Systems Engineering Initiative for Patient Safety: Designing the past, present, and future of healthcare</b> Chair: Abigail R. Wooldridge, University of Illinois at Urbana-Champaign, USA</p>
15.00-15.30	Break
15.30-17.00	Campus tours
	Visits to Dream hall, Robo house or the Faculty of Industrial Design Engineering
19.00-00.00	Social dinner & party

<b>FRIDAY NOVEMBER 4</b>	
9.00-10.30	Parallel sessions
	<p><b>15. Use-related risk management and risk assessment for medical devices and combination products</b> Chair: Thomas Studeli, F. Hoffmann-La Roche Ltd , Germany</p> <p>15.1 (45) Requirements for use-related risks assessments - an Ergonomics perspective - Thomas Stuedeli</p> <p>15.2 (55) Linking HF/Usability Testing with Use-related Risk Analyses – Best Practices and Pitfalls - Florian Schauderna</p> <p>15.3 (86) SE-related Risk Analyses for a medicinal product with a simple co-packaged device – A case study - Stephan Horst</p> <p>15.4 (12) Design of an evidence-based checklist to help prevent use error with auto-injector pens - Jessica Schiro, Sylvia Pelayo, Louise Heyndels and Romaric Marcilly</p> <p>15.5 (69) Instruction for Use as Risk Mitigation - Challenges and Opportunities - Torsten Gruchmann and Stephanie Schwenke</p> <p>Lessons learned and panel discussion</p>
	<p><b>16. COVID 19 and beyond: Impact on work system design</b></p> <p>16.1 (99) User-centred design of work procedures to support healthcare during COVID-19 and beyond - Paul Bowie and Sue Hignett</p> <p>16.2 (75) Analyzing the Work System Elements Impacting Burnout of Health Care Professionals in a COVID-19 Testing Laboratory - Carolina Carvalho Manhães Leite, Alexandra Chronopoulou and Abigail R. Wooldridge</p> <p>16.3 (40) A multidisciplinary approach to designing a PPE Decontamination Process - Tabitha Chiu and Garry Bassi</p> <p>16.4 (53) Work System Design to Support Interdisciplinary Disaster Response - Kaitlyn L. Hale-Lopez, Abigail R. Wooldridge and Molly H. Goldstein</p> <p>16.5 (94) Facing the unknown: organisational resilience strategies of Swiss healthcare workers during the first year of the COVID-19 pandemic - Rafaël Weissbrodt, Sandrine Corbaz-Kurth, Lamyae Benzakour, Sarah Cereghetti, Claude-Alexandre Fournier, Gregory Moullec, Alice Nguyen, Jean-Claude Suard, Laure Vieux, Hannah Wozniak, Jacques Pralong, Typhaine Juvet and Pauline Roos</p> <p>16.6 (96) Impact of COVID-19 on clinical training and reported burnout rates in Scotland’s national health service: a cross sectional survey of clinicians-in-training - Paul Bowie</p>
	<p><b>17. Better in-Better out: (p)rehabilitation with patients preparing for and recovering from elective (oncological) surgery</b> Chairs: Lottie F.M. Kuijt-Evers and Mark Scheper, The Hague University of Applied Sciences, The Netherlands</p> <p>17.1 (50). Which multimodal lifestyle interventions contribute to a faster physical recovery, maintenance of physical performance and functional status, and improved quality of life of people suffering from colorectal cancer during and after cancer treatments? - Sander Kerstens, Jolieke Warmer, Canan Ziyilan and Lottie Kuijt-Evers</p>

	<p>17.2 (33). Selective Taste Management: An Innovative and Feasible Selfcare Intervention for Adult Cancer Outpatients suffering Chemotherapy-Induced Dysgeusia - Marleen Corremans, Andy Verroeye, Lobke Van den Wijngaert, Edwig Goossens, Geertrui Vlaemynck, Dimitri Mortelmans and Bart Geurden</p> <p>17.3 (62). Better in - Better out What about the hospital stay? - Lottie Kuijt-Evers</p> <p>17.4 (102). Patient safety after bariatric surgery: the influence of the quality of care transition and patients' health-related control beliefs - Matthias Marsall, M. Weigl, A. Bäuerle and M. Teufel</p>
10.30-11.00	Break
11.00-12.30	Parallel sessions
	<p><b>18. Healthcare services and management</b></p> <p>18.1 (82) Interpretation and understanding of Building Regulations 'Part M' by currently active Housing Professionals for the design of UK Homes to support People Living with Dementia - Barbara Balocating Dunn</p> <p>18.2 (42) Making the most with what you have: Using simple, low-cost mock-ups and simulations to support hospital redevelopment - Megan Hamilton and Christopher Colvin</p> <p>18.3 (41) Diverting Diverters through Lock Boxes - Tabitha Chiu</p> <p>18.4 (98) A Human Factors assessment of the COVID-19 mass vaccination service delivery in Scotland - Paul Bowie and Janette Edmonds</p> <p>18.5 (97) A qualitative study of previous training, experiences and learning needs of healthcare safety investigators in Scotland - Paul Bowie</p>
	<p><b>19. Digital health</b></p> <p>19.1 (63) Digital technologies in healthcare – implications for job demands, job control and social support among healthcare professionals - Sara Karnehed, Lena-Karin Erlandsson and Margaretha Norell Pejner</p> <p>19.2 (59) Investigating the Design of Online Health Consultation Platforms and Patient Experience: An Exploratory Study - Lanyun Zhang, Jingyi Yang and Haiou Zhu</p> <p>19.3 (5) Materiality and Digitalisation: Observations on eHealth Solutions for Care - Susanne Frennert, Gudbjörg Erlingsdottir, Christofer Rydenfält, Veronica Milos Nymberg, Björn Ekman and Lena Petersson</p> <p>19.4 (32) eUlift: patient handling for caregivers with mobile technology - Aline Ollevier, Tania Goderis and Sylvie Schiettekatte</p> <p>19.5 (31) Building understanding of experience design in digital healthcare: preliminary results of semi-structured interviews - Tingting Wang, Shuxian Qian, Haiou Zhu, Richard Goossens, Guido Giunti and Marijke Melles</p> <p>19.6 (28) Professional Differences in Use and Perceptions of an Augmented Reality Code Cart Application - Abigail Wooldridge, John Morgan, Widya Ramadhani, Keith Hanson, Elsa Vazquez-Melendez Md Faap Facp, Harleena Kendhari, Nadia Shaikh, Teresa Riech, Matthew Mischler, Sara Krzyzaniak, Ginger Barton, Kyle Formella, Zachary Abbott, John Farmer, Rebecca Ebert-Allen and Trina Croland</p>
	<p><b>20. Guiding principles for human performance for the healthcare product system</b></p> <p>Chair: Dr Brian Edwards - Pharmaceutical Human Factors Sector Group of CIEHF and Managing Director, Husoteria Ltd, UK</p> <p>Panel members: Brian Edwards, Pharmaceutical Human Factors Group, CIEHF, UK, Julie Avery, CIEHF, UK, Angela Caro-Rojas, Pontificia Universidad Javeriana, Colombia, Carlos Aceves-González, Universidad de Guadalajara, Mexico</p>
12.30-13.30	Lunch
13.30-15.00	<p>Plenary session</p> <p>Keynote by Kathleen Mosier (past president of the International Ergonomics Association) &amp; closing ceremony</p>
16.00-18.00	Social activity: Delft city walk