

How can we enhance nurse experiences of using EMRs in acute hospitals? A rapid co-design workshop

Bernice REDLEY^{a,b1} Rebecca JEDWAB,^{a,b} Helen RAWSON,^{a,b} Shaluni TISSERA^b
Osajiuba Somtochukwu AMAKA,^b Agnes NJANE,^b Elizabeth MANIAS^b
^a*Centre for Quality and Patient Safety Research - Monash Health Partnership,*
^b*School of Nursing and Midwifery, Deakin University, Burwood*

Abstract. Healthcare delivery has been transformed by Electronic Medical Record (EMR) systems that have changed the ways in which clinicians work, interact and communicate. Despite the benefits that EMRs offer for record keeping, emerging literature suggests EMRs can have negative consequences for worker wellbeing and patient safety in increasingly complex health systems. Innovation is needed to ensure EMRs keep pace with shifting paradigms in technology, patient safety and worker wellbeing. In this workshop, small groups will be facilitated through an adapted 5-step 'rapid-cycle' human centered co-design process to innovate on ways to enhance health worker wellbeing using EMRs. The outcomes are twofold: 1) gain new insights about user experiences of EMR and ideas to enhance user wellbeing, and 2) experience a 'rapid-cycle' co-design process useful to engage busy hospital workers in human centered design, in time poor hospital settings.

Keywords. Co-design, electronic medical record,

1. Introduction

Computerisation of the healthcare system, such as the introduction of electronic medical records (EMR), has been used to promote healthcare safety and quality by eliminating failure through standardisation, reduced performance variation, compliance and measurement [1]. EMR systems originated to facilitate financially-focused billing and patient flow, but have since evolved to support clinical decisions and workflows, changing how healthcare workers collect, document, access, use and communicate information for patient care. These systems now infiltrate hospitals worldwide, with Australian hospitals among the most recent adopters.

Reporting the impacts of EMRs on patient safety and health professionals is inconsistent, with contradictory messages about patient safety from clinicians and administrators [2]. Reports associate EMRs with improved patient care, [3] and support for adverse event detection [4]. Others report EMR's are associated with different or new types of patient safety errors [5, 6], increased mortality [7], inconsistent clinician performance and patient outcomes [8]. EMR-related factors have also been associated with increased daily frustration, and cognitive and workload demands, which contribute

¹ Corresponding Author, School of Nursing and Midwifery, Deakin University, 221 Burwood Highway, Burwood, Victoria Australia 3125; E-mail: Bernice.redley@deakin.edu.au.

to job strain, exhaustion and burnout among clinicians [1, 9-11]. Clinician-EMR interactions are recognized as potential patient safety hazards [12] and EMR associated clinician wellbeing is a current patient safety priority [13].

EMRs change patterns of human interactions, autonomy, and communications that form an essential source of healthcare worker wellbeing and job satisfaction [14]. Promoting a collective sense of self-efficacy, self-esteem and personal accomplishment is central to mitigating the burnout syndrome, as these aspects can contribute to improved wellbeing by enhancing the sense of work importance and meaning that healthcare clinicians derive from their work [1, 15].

Whilst initially EMRs drew clinicians away from patients toward fixed computer screens, recent shifts in health technology to digitisation means they no longer tied to fixed infrastructure and have increased freedom to engage with patients, and each other. Concurrent advances in patient safety thinking to embrace complexity [1, 16, 17] also heralds a paradigm shift from using technology to promote standardization and automation, to successfully creating high-quality care through adaptation, improvisation and dedication to pursuit of safety [1, 17].

The constantly evolving complex socio-technical hospital system creates unique challenges to care for increasing numbers of patients with complex conditions in challenging circumstances has a cost for clinician well-being. Providing safe, high quality care requires high performing clinicians who can rapidly adapt, make judgements and decisions in dynamic circumstances, and vary their behaviour to match evolving situations in the messy, stressful nature of human work experiences. Technology needs to promote desired clinician behaviors for delivering safe, high quality care, without taxing their physical and emotional reserves.

The goals of this workshop are twofold. First to understand the emotional impacts of EMRs on clinicians and explore their adaptations and improvisations used in the real world. Second, participants will learn an interactive 5-step 'rapid-cycle' human centered co-design process; activities include empathize, define, ideate, prototype, and test and refine a novel solution. Adapted from Stanford University's model for Human Centred Design, this fast-paced interactive approach is a fun way to engage and inspire clinicians in busy hospital settings to create innovative ways to improve their workplace. We will start with people and end with innovative solutions that are tailor-made to suit their needs.

2. Workshop organisers

Associate Professor Bernice Redley is a member of the Institute for Health Transformation, Centre for Quality and Patient Safety Research at Deakin University with over 30 years' experience working in industry-university partnerships. She is an alumnus of the d-school (design-school) 4 day bootcamp run by the Hasso Plattner Institute of Design at Stanford University (USA) and the University College of London Behaviour change summer school. Leading this workshop will draw on her extensive experience as an industry-researcher and skills in co-design and change to lead this workshop.

Ms Rebecca Jedwab is a Critical Care Registered Nurse undertaking doctoral studies at Deakin University. Her research is examining the role of nurse motivation, engagement and well-being in the implementation of an EMR in an Australian healthcare organisation.

Dr Helen Rawson is a Senior Research Fellow in Deakin University's Centre for Quality and Patient Safety Research-Monash Health Partnership. Her significant research contributions include development and implementation of care models that increased staff capacity to engage older people and families in care delivery, and research translation that supports quality care for older people.

Dr Elizabeth Manias is a Research Professor at the School of Nursing and Midwifery at Deakin University. She is a registered nurse as well as registered pharmacist. Her extensive research program involves consumer participation in healthcare, as well as communication processes and the ways in which communication relates to adverse events, with a particular focus on medication management and adherence, and patient safety. Her work has encompassed diverse research approaches including co-design with consumers to increase their involvement in decisions about their health care.

Shaluni Tissera, Osajiuba Somtochukwu Amaka and Agnes Njane are all recently graduated Nursing Honours students. All workshop organisers and facilitators are from Melbourne, Victoria, Australia and have completed training to provide small group facilitation in human centered co-design.

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