

# The Care Informatics and Technologies Project – Enhancing Capability, Motivation and Opportunities in Digital Health Among Health Professionals and Students

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**Abstract.** A change in the behaviour of the current and future workforce in regards to how they approach the needs and challenges in the healthcare sector is necessary to transit from the current curative paradigm in health to a new one focused on prevention and rational use of resources. Digital health is instrumental in the adoption of this new paradigm as most e-health applications focus on a preventive and personalized approach, on lifestyle changes (e.g. fitness and nutrition), health literacy and self-tracking allowing consumers to manage their own health. The Capability-Opportunity-Motivation Behaviour (COM-B) model and the Behaviour Change Wheel framework (BCW) have been applied to characterise interventions for behaviour change in health professionals. They provide a systematic way of characterising interventions and enable their outcomes to be linked to mechanisms of action. Acknowledging the potential of informatics and technologies in current and emerging health issues and the importance of focusing on care needs rather than on the development of technologies *per se* to achieve meaningful clinical outcomes, the College of Nursing and Health Sciences (CNHS) in Flinders University is undertaking the Care Informatics and Technologies project. This priority project aims to build capacity in digital health within the College's students and staff, so that informatics, digitisation and technologies become part of clinical learning, research and ongoing clinical practice. We aim to report the protocol of this project and discuss it in the context of the expected change in behaviour of health professionals that is deemed necessary to address the Australian digital health agenda.

**Keywords.** Digital health, education, workforce, behaviour change

## Introduction

Digital health is defined as the use of technologies and communication to improve practices and systems of care aiming at better health outcomes [1]. The National Health Strategy (Strategy) established in 2016 is a policy that aims to coordinate and promote the use of digital technologies by consumers, providers, managers and health systems in Australia [2]. As part of the Strategy all states and territories in Australia have prioritised digital health as key to improving service delivery and health outcomes

In a survey that involved consumers and health providers, the Strategy found that, currently 10% of Australians access personal health data on smartphones and 30% on computers [2]. However, 50% declared that would like to do it mainly to get safe and personalised care, communicate with health professionals and get support in making right healthcare choices. Thus, consumers recognise digital health as a tool to communicate and get support from the health care sector. Clinicians think that digital solutions might offer more time with patients and less with ‘paper-work’, increase efficiency, simplify daily work, help find information faster, and improve communication with other caregivers [3]. Although 76% of Australian clinicians use online digital tools as references, the use of digital solutions for other purposes, such as sharing health records with patients and transferring prescriptions to the pharmacy, is much lower- 26 and 28%, respectively [2].

This might be explained by concerns about privacy and security, poor knowledge on the benefits on processes quality and clinical outcomes, but also to a lack of confidence in ‘owning the space’ [2,4]. This relates to health professionals taking control of the clinical space which has digital technologies as a fundamental part [4]. Poor training contributes to this lack of confidence – as far as 61% of the health professionals have never received any training in regards to the use of technologies [3]. The role of Universities in establishing learning programs on digital skills for health professionals from early education to professional development programs and by making healthcare professionals co-developers of digital health solutions is recognised by health professionals, which have listed universities as the preferable place to have training in digital health [3]. In Australia, clinicians listed role modelling, knowledge sharing and professional development opportunities as the main enablers to implementation of digital health technologies into practice [5].

Shifting from traditional to digital approaches to data collection and management, communication and integration requires that the current and future workforce change established behaviours. The Behaviour Change Wheel framework provides a systematic way of characterising interventions that enables their outcomes to be linked to mechanisms of action [6]. Underlying the framework there is a theoretical model that defines three interconnected components that need to be approached in order to promote behaviour change - Capability-Opportunity-Motivation Behaviour (COM-B). Each component can be approached by one or more among nine intervention functions (education, enablement, training, modelling, coercion, incentivisation, persuasion, environmental restructuring and restrictions) and seven policy categories (environmental/social planning, communication/marketing, legislation, guidelines, fiscal measures, regulation and service provision) [6]. Its simplicity, comprehensiveness and practical nature has led BCW to be widely adopted as a framework to design and/or analyse outcomes of interventions in academic and policy fields. It has also been applied to characterise interventions for changes in behaviour in health professionals [7].

Acknowledging the potential of informatics and technologies in current and emerging health issues and the importance of focusing on care needs rather than on the development of technologies per se to achieve meaningful clinical outcomes, the College of Nursing and Health Sciences (CNHS) in Flinders University is undertaking the Care Informatics and Technologies project. This priority project aims to build capacity in digital health within the College’s students and staff so that informatics, digitisation and technologies become part of clinical learning, research and ongoing clinical practice. We aim to report the protocol of this project and discuss it in the context of the expected

change in behaviour of health professionals that is deemed necessary to address the Australian digital health agenda.

## **1. Methods**

From February 2019 to June 2020, a work group comprised of academics in Nursing, Health Sciences and Digital Health of the College of Nursing and Health Sciences in Flinders University will develop an intervention aimed at educating, enabling, motivating and creating opportunities to students and staff to contribute to health technology innovation that translates into meaningful clinical outcomes. In order to achieve this, the project will investigate knowledge and attitudes towards digital health and promote capability, motivation and views on opportunities in Digital Health of staff and students through research and educational components. The project work is being led by a dedicated Senior Research Fellow tasked with the developing College capabilities with the support of an experienced Working Group of Digital health researchers.

The research component of the Care Informatics and Technologies project aims to understand the staff and student's knowledge, attitudes and motivations in regards to care informatics, technologies and digitisation. In order to achieve this, we will conduct online surveys and workshops. The surveys will be anonymous and will investigate the participants' knowledge on concepts, current policies and uses of Digital Health in practice, as well as their attitudes towards key issues in Digital Health (privacy, security, impact to workflows, communication with consumers and between professionals, data collection and management, consumers' empowerment, monitoring of health habits and conditions). The workshops, through interactions and small group activities, will explore the views of stakeholders from different backgrounds' - clinicians, academics, managers, innovators and industry health sector- on the needs in ongoing clinical practice and research, the challenges to implementation of digital solutions and business models for partnerships. Workshops will also support interactive planning for research studies in digital health and building awareness of digital health grant opportunities.

The educational component will comprise the development of two online training modules. The introductory one will target Nursing and Health Sciences students and professionals and will have the learning objectives of making participants aware of (1) digital interventions' taxonomy/classification schemes, (2) current policies and use of digital technologies by the health sector and consumers, (3) health providers demands and expectations on care informatics and technologies in Australia, (4) benefits and challenges to implementation of digital technologies in the healthcare sector. It is expected that by the end of the module participants will be able to identify technology and informatics related opportunities derived from clinical perspectives is another objective of this education intervention.

The second educational module will focus on research methods in digital health highlighting the implementation and business-related issues that are key points to the success of digital health interventions. As learning outcomes, it is expected that participants will be able to identify clinical issues for immediate research development and to understand pros and cons of specific research tools in projects that use digital solutions to healthcare needs.

The outcomes of the project will be assessed by the end of 2020 and will be the number of research projects that include Digital Health in the College and the number of attendees to the online educational modules and workshops.

## **2. Discussion**

In accordance to the CNHS values of changing and improving practice through advanced and innovative learning programs, multidisciplinary research, and strong partnerships to industry, community and the healthcare sector, the Care Informatics and Technology project aims to motivate, educate, enable and create opportunities to staff and students to engage in clinical and research activities that use Digital Health as a means to address care needs.

A change in the behaviour of the current and future workforce in regards to how they approach the needs and challenges in the healthcare sector is necessary to transit from the current curative paradigm in health to a new one focused more on prevention and rational use of resources [8]. Digital Health is a pillar of the new paradigm since most digital applications focus on a preventive and personalized approach and on lifestyle changes. Health professionals have a pivotal role in its implementation. Changing professionals' behaviours, as any circumstance that require behaviour change, can be achieved by addressing the interconnected three components of behaviour – capability, opportunities and motivation – as hypothesized by the CO M-B framework.

In order to do this, the Care Informatics and Technologies project, will use education, enablement and modelling as intervention functions [6]. Education in Digital Health will be pursued through online educational modules. Enablement will be achieved through engagement of clinicians, researchers with health and technology backgrounds and business stakeholders in workshops, which will create opportunities for partnerships. In regards to modelling, participation of College leaderships with successful experiences in Digital Health in workshops and online courses (through videos) will provide the role model for staff and students. Associating a particular behaviour with peer and reference groups has been demonstrated to be one of the most effective tools to promote health professionals' adherence to that particular behaviour [9].

## **3. Conclusion**

In conclusion, the Care Informatics and Technologies project aims to build capability, as well as to enhance motivation and opportunities in Digital Health for health professionals and students in the CNHS. Through an intervention that include education, enablement and modelling issues we aim that students and staff are able to 'own' clinical and research spaces that have digital technologies so that they can contribute with clinically meaningful outcomes

Should include an acknowledgement to Flinders University for USF. Might need to get correct wording from Julianne Fox.

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