Editorial: JoCI special issue on Health

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Overview of ICTs and Health

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Community informatics links economic and social development efforts at the community level with emerging opportunities in Information and Communication Technologies (ICTs). In recent years in public health there has been an increased focus on the broader social determinants of health and on social inclusion, as evidenced in the 2008 Final Report of the Commission on Social Determinants of Health. Broader determinants include education, income, social connection, and other opportunities that support improved health and wellbeing.

In particular, addressing the broader social determinants of health is now seen as a key way forward to reduce health inequities - unfair andremediable differences in health status and health outcomes within and between populations. This leads us to ask what role ICTs can play in further advancing improvements in health and social inclusion, and in reducing health inequities, not only across whole populations but also for those who are less socially and economically advantaged. This is relevant in both developing and developed countries. It is also an essential area to debate, considering that the well-known social gradient in health is mirrored in a digital gradient (Newman et al 2010, JoCI 6,2) i.e. that those groups with poorer health are generally also those with less technical and socioeconomic resources to access and use ICTs.

The papers in this JoCI special issue on health illustrate the spectrum of application of ICTs in the health domain and to support health in the community. They cover developments in a variety of locations around the globe and a diversity of research approaches, in Africa (Sierra Leone, Kenya and South Africa), Australasia (Australia, New Zealand, India, Papua New Guinea), Canada and the US, and the UK and Ireland. In particular authors were asked to highlight community involvement and tangible benefits to communities. The papers show how ICTs may support health improvements in the way they are used to enhance medical or clinical care or improve health surveillance, in the way they increase citizens' access to and engagement with health services, or
in broader areas which support health such as community development and digital storytelling.
The articles in this Health special issue can be categorized into four groups: applications of health IT systems; impact of community level projects; management of clinical conditions; and incident reports.

We have three papers which address system level applications for health: The paper by Loring et al entitled *Improving community health equity: the potential role for mHealth in Papua New Guinea* explores the implications of mHealth interventions in Papua New Guinea’s healthcare system as well as the importance of continuous evaluation to reduce community health inequity and to ensure improved health outcomes. A paper from Africa by Kossi et al focuses on *Developing decentralised health information systems in developing countries - cases from Sierra Leone and Kenya*. This reflects on means and methods to improve community health by using decentralized health information systems in both Sierra Leone and Kenya. It also touches on some strategic ICT designs which were implemented to encourage participation in communities. Buckingham’s paper on *Visualizing qualitative spatial data to understand social epidemiology in public health* explores the use of qualitative place-based information collected from residents of an area about their lived experiences in a community. His paper argues that this can provide useful additional information to quantitative indices of health determinants, so as to better inform public health decision-making.

We have five papers about community level programs, looking at the role of ICTs in improving health in a broader sense for communities and children. Adelson and Olding’s paper *Narrating Aboriginality online: digital storytelling, identity and healing* identifies a process in Canada which holds the potential to help heal Aboriginal identity after a history of colonisation - this is an important influence on health for many Aboriginal communities around the globe. Another three papers discuss specific programs aimed at improving health and wellbeing. Davis, Bean and McBride’s article on *Decreasing health disparities through technology: building a community health website* identifies a range of issues that needed to be addressed for disadvantaged and ethnic minority communities in the USA to successfully use a health information website; these include the need for text at appropriate reading levels (lower than is the norm on the Internet), visual simplicity, cultural competence and cultural representation, non-English language text, and provision of community-based and supported Internet access. In *Bridging the digital divide: a bilingual interactive health kiosk for communities affected by health disparities* Bean, Davis and Valdez report on the benefits of community engagement and collaborative strategies to develop a bilingual interactive community-based kiosk to support underserved groups to access the website-based health information that is discussed in the previous article. Nansen et al in *MyBus’: Young people’s mobile health, wellbeing and digital inclusion* write about the Australian experience of a community mobile youth centre which aims to provide increased access to health information but which at the same time also stands to increase health in the broader sense through increased social inclusion brought by improved digital access and skills. Hicks et al write of similar experiences with children in Ireland in *With a little help from my friends: experiences of building a virtual community for children with cancer*, whereby children's wellbeing was improved by providing an ICT-mediated means to increase their social participation and social connection (both important for health).
The special issue has two papers addressing the clinical application of ICTs: Ahmed and Pulman's paper, *Concussion information on the move: the role of mobile technology in concussion management*, explores concussion-related mobile applications and the future role of mobile technology in concussion management as part of smartphone technology continuous evolution. Banerjee and Basu's paper, *Impact of Internet on delivery of critical cardiac health care*, is a case study conducted in India to quantitatively assess the impact of Internet effectiveness on the delivery of efficient critical healthcare in order to recommend new telemedicine centres in underdeveloped areas.

We have three reports: Wright et al's coverage of *Health impact assessment of a UK digital health service* reminds us that despite techno-optimism, systematic assessment of digitally-mediated services is essential to identify whether expected benefits in terms of improved health or reduced health inequities will indeed eventuate in reality. It also reminds us that those groups with worse health are also those with less technical and socioeconomic access to ICTs. Shozi et al's paper on *Perceived benefits of remote data capturing in community home-based care: the caregiver's perspective* looks at caregivers' views about the pros and cons of replacing paper-based record systems with mobile-based records within the mostly volunteer-supported community home-based care in South Africa. This is expanding in developing countries as an alternative to the overburdened formal public health system. De la Harpe et al's paper, *Socio-technical approach to community health: designing and developing a mobile care data application for home-based healthcare in South Africa* addresses the use of innovative socio-technical methods to design and develop a mobile data application for home-based healthcare in Western Cape.

Chigona et al have written a very useful paper entitled *A review on mHealth research in developing countries*, which is an analysis of papers presented at the 3rd International Mobile Communication for Development Conference held in New Delhi, 28-29 February 2012. This review explores challenges and barriers in adopting and implementing mHealth in developing countries. It highlights potential benefits of mHealth in developing countries such as increased efficiency, service cost reduction and timely dissemination of health information, but points out that much of the research on mHealth is currently limited to description and needs to move to evaluating whether mHealth potential is achieved in reality. Finally, we have a Point of View article by Ian Pringle, *W(h)ither community: locating participatory approaches to ICT-enabled health and development*. This discusses the challenges faced in achieving genuine community-based approaches with 'real participation' to promote better health and development using ICTs.

We would like to take this opportunity to thank all the authors for submitting their work to this special issue which highlights the potential of ICTs to improve health in a range of ways, and the ways that ICTs can be used to address health inequities and disadvantage in communities. Equally important we are most grateful to all the reviewers for their valuable time and efforts in helping to ensure the highest quality of the submitted articles. It really has been an international community effort to produce a special issue about communities around the globe! We extend our warm thanks to Dr Mike Gurstein who has been an exceptional Editor-in-Chief, providing most generous guidance and timely support. We are also grateful to Rean van der Merwe and Michel Castagne for providing expert technical support with the journal online system, to Nafiza Azad at the University of British Columbia for her editorial assistance, and to Chris Newman for laying-out the articles in
HTML format. We trust that this issue will further expand your understanding of how ICTs can support improved community health, will perhaps spark your interest in new areas, but most of all inspire you - as it did us - to initiate or (continue) working to make a difference in this exciting area of community informatics.