# WIS 2016: Special Issue on: "System thinking in eHealth and eWelfare"

Our understanding on the factors that affect human health and well-being grows day by day. The system of "health" grows bigger and more complicated every day, and we no more have the wrong illusion that the system would be somehow totally manageable by someone. Rather, the system of health and well-being takes its own routes, and often we are just spectators in the developments, even in the management of our own personal life, health and well-being. The system that takes its own ways can well be called an "ecosystem".

The health ecosystem has several subsystems. At the core is of course the human body and mind. As our conference and special issue is not concentrated on medical issues and studies, this core (eco)system is just at the background of the analyses. Our focus is more on the human-made systems through which health, well-being and when needed also medical care is being delivered. As everybody knows these systems can be very complicated, and take odd actions and ways of functioning. A special subgroup of these human-made systems (and problems) is those of information systems. In the age of digitalization, they seem to penetrate all fields of human activity, not least health, well-being and medicine.

Most systems try to maintain some kind of balance. Especially with the word ecosystem we refer to systems that try to maintain balance and operations – that search for sustainability. All too often even in health and well-being and medicine we see good and well-designed systems and solutions, that at the very end seem to be unsustainable. This is misuse of resources, and often ends up to personal and organizational failures – if not even to tragedies. We feel that system thinking especially in its sustainable form is worth encouraging – thus this selection of name "System thinking in eHealth and eWelfare" for our special issue.

Especially professional health and social care delivery is very fragmented. We have seen that all too often even the best health and social care professionals rather blindly focus just on their own specialty, for some reason ignoring the understanding of the total situation. Our special issue calls for opening up of horizons. Each individual must master well and deeply his or her small area of the ecosystem, but at the same time the true professional must keep an eye on the total system for catering for the human health and well-being. If not properly conducted, individual operations in the subsystems can end up to suboptimal outcomes for the total system.

With these starting points we have set for you here a tray of five interesting articles, selected out from over 40 candidates. We believe that each of these articles offers you, the reader, an interesting snapshot of the functioning of the total health and well-being system.

The issue of gamification of elderly people's physical activities is handled in the article by Aung Pyae, Tapani N. Liukkonen, Mika Luimula, Christina Kattimeri, Veroline Cauberghe, and Jouni Smed titled "Investigating the Finnish Elderly People's Attitudes and Motivation towards Digital Game-Based Physical Exercises". Gamification is a current password for motivation increase, and known to work for many population groups. The burning question is whether gamification works also for older people. This article concentrates on this issue in the case of increasing physical activity.

One integral part of the study was review of current commercial game offerings. The results are not very good: Majority of commercial games are not designed for older people, for example the pre-built gestures programmed to devices are often hard for elderly people to follow. This all despite the fact that academic literature seems to be full of guidelines on how to design good games, even especially for elderly people.

The article "Mediator – Enabler for Successful Digital Health Care" by Janne Lahtiranta takes up the concept of Mediator. A mediator is a party that helps citizen, especially those with low self-efficacy and health or e-health literacy to access health care services, especially

if modern information technology – a factor that might scare many users – is involved.

Different intermediaries in health care are not a new phenomenon, indeed all official roles in health care systems can be interpreted to have some kind of intermediation function – but the increased complexity of the health and well-being delivery system and the growing amount of citizen/patients in the state of needing help underlines the need for even new dedicated mediators. A comparison is possible: if you have a lot of extra wealth to invest, you might hire and need private investment banking services. Similarly, if you have a lot of health issues to handle, you might need private health brokerage services.

Ari Helin and Tomi Dahlberg in their article "Volume, benefits and factors that influence inter-municipal ICT co-operation in relation to ICT-related social services and healthcare services" studies co-operation in the field of ICT between municipalities. Municipalities as well as other organizations too struggle in the pressure between too little and even diminishing resources, and increased demands from different stakeholders. In principle incentives for co-operation between municipalities should be many and rich.

Based on a research effort with 144 Finnish municipalities in 20 different regions, the authors draw conclusions. The municipalities themselves wrote a report in each region. According to the findings, co-operation between municipalities can take place in different levels and forms: infrastructure, management, vendor relationships, etc. Those municipalities that had been successful in establishing co-operation were also satisfied with the outcomes. One of the conclusions of the article is that even when reason and sense speak for co-operation, it is not always taking place. There might be some social and psychological reasons for not co-operating, and they should be studied in deeper detail in the future.

The article "Tactile maps – Finnish O&M instructors' experiences on usability and accessibility" by Stina Ojala, Riitta Lahtinen and Helinä Hirn takes up the issue of orientation of visually impaired people. Among other solutions, tactile maps are a technology to help them. Tactile maps include features that increase the spatial understanding of the user more than traditional two-dimensional maps. Use of different shapes, textures, object sizes and also colors belongs to tactile maps. Tactile maps can be crucial to the orientation of visually impaired people. The article finds out among other things that tactile maps are a rather scarce resource, and that unfortunately yet no standards on how to make tactile maps exist.

The article by Brita Somerkoski title "Green Cross: Application for analyzing School injuries" discusses the topic of school context injury reporting and analysis and problem solving. Injury is a leading cause for deaths for adolescents aged 0-19 years in Finland, and injuries also take place in the school context.

The article analyses user experiences of Vihreä Risti, Green Cross, an application developed in Finland for handling of injuries and other hazard situations in schools. The results show that sustained systematic use of the tool could improve safety and hazard management routines in schools.

We wish to thank Finnish Journal of eHealth and eWelfare for publishing this special issue and giving us a parade door to address the audience of Finnish health and social care professionals. A big thank goes of course to the authors of the special issue for sharing their knowledge, as well as for all the reviewers who catered for quality assurance for this special issue. We wish you good and educating moments when reading the articles.

**Reima Suomi, Hongxiu Li, Pirkko Nykänen, Nilmini Wickramasinghe, Gunilla Widén, Kristiina Häyrinen**