

## eHealth2018: Special issue on “Health communities facing cyber transformation”

Finnish Society of Telemedicine and eHealth (FSTeH), the second oldest national member of International Society for Telemedicine and eHealth (ISfTeH), organised the XXIII international ISfTeH conference in collaboration with the international society. The main themes of the conference were: citizens as partners and as a disrupting factor in healthcare, cyber era in leadership and education, benchmarking nationwide eHealth communities, beating cancer with the help of cyber community, tackling acute crisis in local and distant environments, collaboration in innovations and finally eHealth solutions around the world. In this special issue we have invited articles that describe the importance of solid and interoperable environment as an eHealth backbone, emphasize the role of citizens and give an insight into gamification and innovation in shaping the new dimensions of e-Health.

Emergency medical services (EMS) is a perfect example of a service area where eHealth and mHealth have a great potential. The data sources include e.g. sensor measurements, video and voice communication, ge-positioning data as well as more conventional patient's medical history. In their case study article from Finland, Haverinen et al show that EMS is a challenging environment for ensuring fluent information exchange between stakeholders because several different kinds of organizations are involved in EMS missions. The principal problem in EMS communication is scattered health data. The authors discuss various solutions to this problem including the possibilities of artificial intelligence.

Treatment of hearing impairments nowadays makes use of the numerous state-of-the-art technologies and entail complicated set-up, regulation and adjustment procedures requiring frequent consultations with an experienced specialist with access to dedicated equipment, usually available in specialist centers and hospitals. Patients' visits in the specialist center may sometimes require a substantial leave from work as well as financial costs. In their article Śwerniak et al describe

the experiences of the National Network of Teleaudiology in Poland. This network is an example of a modern telehealth solution connecting 21 centers in Poland and even four units aboard with a help of internet and various information technology applications. The current services include telefitting, telediagnosics, telerehabilitation, and tele-education.

In Finland, the national health information exchange enables data communication between various health care actors. In his article, Jormanainen describes how large-scale implementation and adoption of those national Kanta services were carried out step-by-step during its implementation phase from May 2010 to December 2017. The Kanta services currently include integrated, interoperable health information from electronic medical record, personal health record and social welfare sources that can benefit patients, care providers and policy makers. The implementation of Kanta services started initially in 2007 and after year 2011 the adoption of services has been coordinated by a national coordination function. As a result, the Kanta services include My Kanta Pages (citizen web access), Prescription Centre, Pharmaceutical Database, Patient Data Depository and Patient Data Management Service, Kelain (professional web access), Client Data Archive for Social Welfare Services and Personal Health Record. The article discusses the use of various monthly follow-up indicators to oversee the development.

Healthcare professionals, especially in oral healthcare, are often unaware of the patients' overall life situation. Furthermore, oral health can play an integral role in recognizing compromised individuals. Riepponen et al describe how the new multi-professional operational model was built for the service management in oral health prevention of children. In the article, the authors described operational changes needed to create a platform for digital solutions. The purpose of those solutions is to improve the treatment flow. The Omaolo -platform will be a national patient data register that consists patient-yielded data. This register will be a part

of the national Kanta Personal Health Record. Furthermore, the Omaolo -platform will renew citizens' electronic services, management with real-time information and daily working duties of the professionals.

Due to its strict regulatory environment the health care sector has not been the easiest area as an open platform for novel innovations. eHealth2018 had a 'show and tell' part, more specifically a Hackathon called eHealth2018 Game Jam, which focused on the interactive collaboration and encouraged young developers to innovate and produce novel gamification solutions for health practice. Arpola's article enlightens this part and provides information how Hackathon supports eHealth2018 as a networking platform, and therefore creates connections between health care professionals and IT-developers. By opening the challenges and true needs of the health care sector, Game Jam offered new prototypes and solutions for health care practice.

Holopainen et al introduce how Living Lab connects research and innovation processes aiming at better health and wellbeing for the citizens. More concretely, the Lab was implemented via primary health care services bringing together community and citizens' homes. The authentic environment is a platform for co-creation of new solutions, which helps e.g. elderly people to live longer in their homes. Cooperation between versatile stakeholders leads to better health & wellbeing products and services, doing so it is anticipated to improve health in all sectors of human life. Simultaneously citizens are encouraged to bring in their own ideas how to have better health care services. It is a good sign that

different organizations and social actors are interested in getting new tools for their action.

FSTeH is non-profitable society and collaborates a lot with students. A conference is unique environment in which knowledge transfer is seen as an educational phenomenon that can be realized on the individual, intra-organizational, or inter-organizational level. The feedback from the students has been positive and each year the student recruitment has realized well. Kouri & Ahonen describe the whole conference planning-execution-evaluation process. Article reveals the students' voice and shares their learning outcomes. The students found out their own skill gaps, and how to increase knowledge through conference work. Simultaneously they familiarized themselves to both scientific and clinical practices in the world of eHealth and Telemedicine. In addition, the students learned to know best expert experts in the field and received valuable tools for their future professional life.

Although our special conference issue shows only few key features of current eHealth and telemedicine trends, it gives a good glimpse of continuous digital transformation in the health care field.

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