Suomen Telelääketieteen ja eHealth seura
Finnish Society of Telemedicine and eHealth

Nordic eHealth 2016

The 21st Finnish National Conference on
Telemedicine and eHealth

"Digitalization and Experimentation Culture"

XXI Kansallinen telelääketieteen
ja eHealth seminaari

"Digitalisaatio ja kokeilukulttuuri"

14.4. – 16.4.2016

Helsinki - Stockholm - Helsinki

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Foreword / Esipuhe

Nodic eHealth 2016 - The 21st Finnish National Conference on telemedicine and eHealth
Arto Holopainen, President
Finnish Society of Telemedicine and eHealth

Dear invited guests, dear participants of the conference,

It is my great pleasure to warmly welcome all of you to the Nordic eHealth 2016 and our 21st annual conference, which is organized as Nordic collaboration with the Finnish presidency at the Nordic Council of Ministers. This joint conference brings the opportunity to promote the Nordic collaboration in eHealth sector by sharing knowledge, experiences and best practices in order to strengthen the Nordic competence in this area.

Finnish Society of Telemedicine and eHealth has been promoting the use of information and communication technology in health care since 1995. Our most important activity is to arrange educational events and to participate in the national discussion. Our society also publishes the Finnish Journal of eHealth and eWelfare (FinJeHeW) together with the Finnish Social and Health Informatics Association (FinnSHIA). Since 2004, we have delivered the annual Finnish eHealth award from the significant accomplishments in the field of telemedicine and eHealth. The required activity can be for example a doctoral thesis in this area or some other important activity in the national or international level supporting the society's goals. We are also supporting continuous education and training of health professionals in the eHealth sector by coordinating special competence for healthcare information technology to physicians and dentists together with Finnish Medical Association and Finnish Dental Association.

Finnish Society of Telemedicine and eHealth supports the international visibility of Finnish eHealth expertise by scholarships. Our representatives participate to healthcare information technology standardization with IHE (Integrating Health Care Enterprise) Finland and with international standardization organizations. Our society is a founding member of International Society of Telemedicine and eHealth (ISfTeH) and our society's secretary Pirkko Kouri holds one of the ISfTeH's board member seats as a vice-president.

This year's conference theme is digitalisation and experimentation culture that describes quite well ongoing transformation where digitalisation is challenging health services. On the other hand it brings new possibilities to evaluate totally new approaches. This year we have seen a historical day in Finland, when for the first time medical students´ education on eHealth is organized together with companies in order to get the eHealth education as permanent part of medical students' education. The year 2016 is a starting point for the first innovation award for startup companies introduced by society's subcommittee for enterprises. With this innovation award the society aims to promote new approaches and innovations in the health services.

The conference lectures covers topics from EU's eHealth strategy, and presents the Nordic case studies on the development of digital services. What kinds of things have actually been done and what can be learnt from them? What has been done in the business world and what kind of new innovations are coming?

On behalf of Finnish Society of Telemedicine and eHealth I would like to express my gratitude to all lecturers for their high quality presentations. Our sincere thanks belong also to all our exhibitors and demonstrators. Without your support, this conference could not be the networking event it is today

Our special thanks belong to the Finnish Ministry of Social Affairs and Health, and to the Nordic Council of Ministers, whose support brings new dimension to the Nordic collaboration.

I wish everybody a very fruitful conference!
Arto Holopainen

Nordic eHealth 2016 - XXI Kansallinen telelääketieteen ja eHealth seminaari

Arto Holopainen, puheenjohtaja

Suomen Telelääketieteen ja eHealth seura ry

Arvoisat kutsuvieraat, hyvät seminaaripäivien osallistujat,

Suomen telelääketieteen ja e-Health seuran puolesta minulla on ilo toivottaa teidät tervetulleeksi Nordic eHealth 2016 ja 21. vuotuiseen kansalliseen seminaariimme, joka järjestetään nyt Pohjoismaisena yhteistyönä Suomen toimiessa Pohjoismaisen ministerineuvoston puheenjohtajamaana. Yhteinen seminaari tuo mahdollisuuden tuoda esille Pohjoismaiden osaamista, kehittää verkostoa ja edistää yhteisiä hankkeita.

Suomen telelääketieteen ja eHealth seura on jo vuodesta 1995 edistänyt tieto- ja viestintätekniikan keinojen käyttöä terveydenhuollossa. Seuramme tärkein toimintamuoto on koulutustilaisuuksien järjestäminen ja kansalliseen keskusteluun osallistuminen. Seuramme julkaisee nyt kahdeksatta virallista vuosikertaa Finnish Journal of eHealth and eWelfare (FinJeHeW) -lehdestä yhdessä Sosiaali- ja terveydenhuollon tietojenkäsittely-yhdistyksen (STTY) kanssa. Vuodesta 2004 alkaen olemme jakaneet vuosittaisen kansallisen eHealth-tunnustuspalkinnon ansiokkaasta toiminnasta telelääketieteen alueella, joksi katsotaan esimerkiksi telelääketieteen ja/tai eHealth alaan kuuluva väitöskirja tai muu erittäin merkittävä seuran tavoitteiden mukainen toiminta kansallisella tai kansainvälisellä tasolla. Tuemme myös ammatillista jatkokoulutusta eHealth -sektorilla mm. vastaamalla osaltamme lääkäreiden ja hammaslääkäreiden terveydenhuollon tietotekniikan erityispätevyysohjelmasta.

Suomen telelääketieteen ja eHealth seura tukee stipendein suomalaisen eHealth osaamisen näkymistä kansainvälisesti. Osallistumme terveydenhuollon tietotekniikan standardointityöhön mm. kotimaisen IHE (Integrated Healthcare Enterprise) Finland -ryhmän ja kansainvälisten stardardointiorganisaatioiden kautta. Seuramme on alan kansainvälisen järjestön, International Society for Telemedicine and eHealth (ISfTeH) perustajajäsen ja seuramme sihteeri Pirkko Kouri palvelee yhdellä sen hallituspaikoista varapuheenjohtajana.

Tämän vuoden seminaarimme teemana on digitalisaatio ja kokeilukulttuuri, joka kuvaa hyvin käsillä olevaa murrosta jossa digitalisaatio haastaa sosiaali- ja terveyspalveluja sekä samalla tuo mahdollisuuden tarkastella kokonaan uudenlaisia toimintamalleja. Tänä vuonna olemme nähneet historiallisen päivän Suomelle, jolloin ensimmäistä kertaa lääketieteen opiskelijoiden opetus eHealth –alueesta on järjestetty yhdessä yritysten kanssa, tavoitteena saada eHealth-opetus kiinteäksi osaksi lääketieteen koulutusta. Tämän vuoden seminaari toimii lähtölaukauksena seuramme yritysjaoksen ensimmäiselle startup -yrityksille suunnatulle innovaatiopalkinnolle. Innovaatiopalkinnolla seura pyrkii osaltaan edistämään uusien toimintamallien ja innovaatioiden esille tuomista sekä soveltamista terveyspalveluissa.

Seminaarin luennoissa tarkastellaan muun muassa EU:n eHealth -strategiaa sekä esitellään pohjoismaisia tapausesimerkkejä digitaalisten palveluiden kehittämisestä. Millaisia asioita on konkreettisesti tehty ja mitä niistä voisi oppia? Mitä yritysmaailmassa on tehty ja mitä siellä on vireillä?

Suomen telelääketieteen seuran puolesta haluan kiittää kaikkia luennoitsijoitamme korkeatasoisista esityksistä. Samoin kiitän kaikkia näytteilleasettajiamme ja demonstraatioiden järjestäjiä. Ilman teidän osallistumistanne seminaarimme ei olisi se oppimisen ja verkostoitumisen paikka, jona se nyt palvelee.

Erityinen kiitos kuuluu yhteistyökumppaneillemme sosiaali- ja terveysministeriölle sekä Pohjoismaiselle ministerineuvostolle, joiden kautta Pohjoismainen yhteistyö saa uuden ulottuvuuden.

Toivotan kaikille osanottajille hyviä seminaaripäiviä!
Arto Holopainen.

Organizers / Järjestäjät

Finnish Society of Telemedicine and eHealth

Finnish Society of Telemedicine and eHealth is an important forerunner in the field of telemedicine and eHealth in Finland as well as internationally. The aims of the Finnish Society of Telemedicine and eHealth are to promote the health of the population through telecommunication and to disperse the expert knowledge within health care.

To reach the aims the Society will arrange seminars, lectures and presentations, courses and symposia, develop a functioning electronic communication system between the members, exert publishing activities, supports research within the discipline, formulate statements in issues dealing with telemedicine and have contact with other telemedicine organisations.

We have a close collaboration with other national and international organisations, health care service providers and users. The purpose of the society is to promote education and development in the field of telemedicine and eHealth. Finnish Society of Telemedicine and eHealth is member of international networks such as International Society for Telemedicine and eHealth, Nordic Telemedicine Association, IHE International and European Connected Health Alliance.

The board accepts the members based on application. Membership will be available for individuals or companies and organisations, as well as supporting membership. Foreign and overseas members do not pay an annual fee, if they submit a regular report of the progress of eHealth in their respective countries.

Internet: http://www.telemedicine.fi/en

The main activity of the FSTeH is annually organized the Finnish National Conference on Telemedicine and eHealth. The conference rotates between different cities and telemedicine sites to give local organizers the opportunity to promote their achievements

- 2016 – Cruising Helsinki-Stockholm
- 2015 – Espoo
- 2014 – Tallinn, Estonia
- 2013 – Seinäjoki
- 2012 – Cruising Helsinki-Stockholm
- 2011 – Joensuu
- 2010 – Cruising Helsinki-Stockholm
- 2009 – Oulu
- 2008 – Cruising Helsinki-Stockholm
- 2007 – Kuopio
- 2006 – Cruising Helsinki-Stockholm
- 2005 – Lappeenranta
- 2004 – Kemi
- 2003 – Cruising Helsinki-Stockholm
- 2002 – Seinäjoki
- 2001 – Rovaniemi
- 2000 – Turku
- 1999 – Kajaani
- 1998 – Pori
- 1997 – Oulu
- 1996 – Kuopio
- 1995 – Turku

Suomen Telelääketieteen ja eHealth seura ry

Suomen Telelääketieteen ja eHealth seura on tieteellinen seura, jonka tarkoituksena on informaatio- ja kommunikaatioteknologian kautta edistää väestön terveyttä ja terveydenhuollollisen asiantuntemuksen levittämistä. Tarkoituksensa toteuttamiseksi seura järjestää seminaareja, luento- ja esitelmätilaisuuksia, kursseja ja symposiumeja, kehittää toimivan sähköisen yhteydenpitojärjestelmän jäsenten välillä, harjoittaa julkaisutoimintaa, tukee alan tutkimustyötä, antaa lausuntoja telelääketieteen kysymyksissä sekä ylläpitää suhteita ulkomaisiin alan järjestöihin. Suomen Telelääketieteen ja eHealth seura on jäsenenä alan kansainvälisissä verkostoissa kuten International Society for Telemedicine and eHealth, Nordic Telemedicine Association, IHE International ja European Connected Health Alliance.

Seuran jäseneksi voi hallitus hakemuksesta hyväksyä henkilöjäseniä sekä kannatus- ja yhteisöjäseniä, jotka toiminnallaan tahtovat edistää seuran tarkoitusta. Jäsenetuihin kuuluvat jäsenkirjeet, joissa tiedotetaan ajankohtaisista telelääketieteen koulutustapahtumista sekä hallituksen toiminnasta. Seuran jäsenille myönnetään alennus osanottomaksuista seuran järjestämiin tilaisuuksiin, sekä eräistä alan kirjallisuuden hankinnoista. Liittymällä jäseneksi Sinulle avautuu verkosto, jossa saat helposti kontaktin muihin asiasta kiinnostuneisiin henkilöihin.

Seura jakaa vuosittain palkinnon eHealth alan ansioituneelle henkilölle.

Internet: http://www.telemedicine.fi

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Ministry of Social Affairs and Health, Finland

The Ministry of Social Affairs and Health is part of the Finnish Government. It is in charge of the planning, steering and implementation of social and health policy.

Tasks and objectives

The goal of the Ministry of Social Affairs and Health is to ensure that everyone has an equal opportunity to lead a healthy and socially secure life.

The ministry's job is to
- promote the population's good health and functional capacity
- promote healthy working and living environments
- ensure that there are sufficient social and health services
- ensure that people have an adequate income at various stages in life
- promote gender equality

The Ministry of Social Affairs and Health is responsible for the planning, guidance and implementation of social and health policy. As an organ of government it
- implements the government programme
- drafts legislation and key reforms
- directs the implementation of reform
- takes care of the government's staff assignments.

The Ministry's responsibilities

The administrative sector of the Ministry of Social Affairs and Health is wide-ranging. It is supported in its work by the expertise of the whole sector's agencies and institutes.

Its responsibilities include
- promoting wellbeing and health
- social and health services
- social insurance (pensions, health insurance and unemployment benefits)
- private insurance
- occupational health and safety
- gender equality.

Socially Sustainable Finland 2020 - The Ministry's social and health policy strategy

According to the Ministry's social and health policy strategy (2011), a socially sustainable society
- treats all citizens equally,
- reinforces participation and a sense of community,
- supports health and a disability-free life and
- provides the security and services required by its members.

There are three strategic choices: a strong foundation for welfare, access to welfare for all, and a healthy and safe living environment.

The goal of the strategy is to enhance social sustainability to the level of economic and ecological sustainability. The goals of the strategy can only be achieved through cross-sectoral collaboration. Open preparations and active interaction lay the foundation for functioning cooperation.

Management and organization

Two ministers (Minister of Social Affairs and Health Hanna Mäntylä and Minister of Family Affairs and Social Services Juha Rehula) and one permanent secretary run the Ministry of Social Affairs and Health.

The ministry employs approximately 430 people.

There are a number of agencies, institutions and advisory boards and committees in the administrative sector of the ministry. The two ombudsmen that worked in connection with the ministry, the Ombudsman for Equality and the Ombudsman for Children, were transferred into the administrative sector of the Ministry of Justice at the beginning of 2015.

More information regarding the Ministry of Social Affairs and Health is available on the webpage: http://www.stm.fi/en

MINISTRY OF
SOCIAL AFFAIRS AND HEALTH
Finland

The Nordic Council of Ministers

Nordic co-operation is very important for the Nordic countries and for Finland as a Nordic country. It is also an important part of European and international co-operation and its goal is a strong Nordic region in a strong Europe. Nordic co-operation aims to strengthen common Nordic interests and values. Common goals and values strengthen the position of the Nordic region as one of the world's most innovative and competitive regions.

Finnish Presidency 2016

The main themes of the Finnish Presidency are water, nature and people. These themes contribute to the goals we have of removing obstacles to cross-border freedom of movement, promoting digitalisation and strengthening the importance of the Nordic countries jointly in the European Union.

On the social and health sector, Finland focuses on "people". Main themes include
- following up on the recommendations in the report The future of Nordic health co-operation, which was written by the former Swedish minister Bo Könberg
- questions around mobility, including immigration, refugees and obstacles to cross-border freedom of movement
- EU cooperation

Finland aims to strengthen Nordic co-operation in questions related to welfare and public health and the future of social and health care services. In addition, Finland strives to enhance Nordic co-operation within the social insurance sector and to seek ways in which the Nordic countries can together influence the EU's social security legislation.

Finally, Finland will initiate a cross-sectoral Nordic priority project (2016 - 2018) called *Open and Innovative Nordic Countries with Well-being People in 2020 - Equal Opportunities to Welfare, Education, Culture and Work*.

The purpose of the project is to
- gather, communicate and market internationally the knowledge and experience related to the Nordic model and its strength in promoting socially and culturally sustainable development;
- strengthen the organizational foundations and resources of Nordic social policy cooperation.

A number of activities will be arranged during the Finnish Presidency. More information is available on the webpage of the Finnish Presidency: http://norden2016.fi/en/home/

The Nordic Council of Ministers

The Nordic Council of Ministers is the official body for Nordic intergovernmental co-operation. Nordic co-operation, one of the most extensive forms of regional co-operation anywhere in the world, involves Denmark, Finland, Iceland, Norway and Sweden as well as the Faroe Islands, Greenland and the Åland Islands.

The Nordic prime ministers have overall responsibility for Nordic co-operation. In practice, responsibility is delegated to the Ministers for Nordic Co-operation and to the Nordic Committee for Co-operation, which co-ordinates the day-to-day work of official political Nordic co-operation.

The Nordic Council of Ministers was founded in 1971 and, despite its name, actually consists of several individual councils of ministers. Nordic ministers for specific policy areas meet in their respective council of ministers a couple of times a year. Matters are prepared and followed up by the various committees of senior officials, which consist of civil servants from the member countries.

The Presidency of the Nordic Council of Ministers, which is held for a period of one year, rotates between the five Nordic countries.

More information regarding the work of the Nordic Council of Ministers is available on the webpage: http://www.norden.org/en

Nordic Council of Ministers
Finnish Presidency 2016

www.norden2016.fi

Acknowledgements / Kiitokset

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Sitra
http://www.sitra.fi

Heart2Save Oy
http://www.heart2save.fi

Ikoni Online Oy
http://www.ikonionline.fi

Kuopio Innovation Oy
http://www.kuopioinnovation.fi

Medanets Oy
http://www.medanets.fi

OuluHealth
http://www.ouluhealth.fi

Onninen Oy
http://www.onninen.com

Polycom, Inc.
http://www.polycom.fi

RemoteA Ab
http://www.remotea.com

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Finnish Society of Telemedicine and eHealth
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Conference Program / Seminaariohjelma

Thursday | Torstai 14.4. 2016

Venue | Tapahtumapaikka: M/S Viking Mariella, deck 8 | kansi 8, conference

11:00   **Registration opens | Ilmoittautuminen avautuu**
Ferry terminal at Kajajanokka, Helsinki | Katajanokan laivaterminaali, Helsinki

12:30   **Boarding opens | Laivaannousu avautuu**

Session 1: Opening Session (Session in English)
13:00 – 14:40
Chair: Head of Development Anne Kallio, Ministry of Social Affairs and Health, Finland

13:00   **Finnish Society of Telemedicine and eHealth Opening Words**
President Arto Holopainen
Finnish Society of Telemedicine and eHealth

13:10   **Greeting from the Ministry of Social Affairs and Health, Finland**
Permanent Secretary Päivi Sillanaukee
Ministry of Social Affairs and Health, Finland

13:30   **EU eHealth Strategy**
Head of Unit Tapani Piha
Cross-Border Healthcare & eHealth, European Commission

14:00   **A look at progress on the development of eHealth in the WHO European Region**
Unit leader for eHealth and Innovation Clayton Hamilton
WHO Regional Office for Europe

14:30   **Delivery of the Finnish National eHealth award**

14:40   **Lunch, coffee break, exhibition and poster presentations**
M/S Viking Mariella, deck 8, conference

Session 2: mHealth Serving Citizens (Session in English)
15:00 – 17:10
Chair: Professor Jarmo Reponen, Oulu University

15:00   **My Kanta and Personal Health Record**
Senior Advisor Teemupekka Virtanen
Ministry of Social Affairs and Health, Finland

15:20   **Iceland National eHealth Services**
Project Manager Guðrún Auður Harðardóttir
Directorate of Health, Iceland

15:40   **Tele Health in Oslo**
Project Manager Maria Helseth Greve and Consultant Hanne Eggen
City of Oslo

16:00   **Danish Intersectoral Collaboration in Home Monitoring for COPD**
Chief Project Manager Tina Archard Heide
TeleCare Nord, Aalborg

16:20	**Swedish EHR Online for Citizens**
	Project Manager Maria Pettersson
	Inera AB
16:40	**Nordic eHealth Benchmarking**
	Research Manager Hannele Hyppönen
	National Institute for Health and Welfare, Finland
16:50	**Delivery of eHealth Startup Innovation Award**
17:10	**Break, accommodation**

17:30	**Ship Leaves Helsinki	Laiva lähtee Helsingistä**

Session 3: Solutions with Innovation Actions (Session in English)
17:40 – 19:25
Chair: Principal Lecturer Pirkko Kouri, Savonia University of Applied Sciences

17:40	**Innovations from Corporations**
	• Sitra, People-Centred and Knowledge-Powered Health Services
	• Heart2Save Oy
	• Medanets Oy
18:10	**Co-creation for New health Technology Innovations**
	Director Tom Ståhlberg
	Healthtech Finland
18:25	**Promoting Innovation for Future Health**
	Director Jenni Nordborg
	Sweden's Innovation Agency VINNOVA
18:40	**Public-Private-Partnership – case OuluHealth**
	Chief Administrative Physician Juha Korpelainen
	Oulu University Hospital
18:55	**Nursing eHealth Strategy to Support Innovation Actions**
	Senior Lecturer Outi Ahonen
	Laurea University of Applied Sciences
19:10	**eHealth Innovations in Practical Nursing**
	Senior Adviser Elisabeth Strandberg
	Swedish Society of Nursing
21:00	**Food Garden dinner**
	Viking Buffet, deck 7

Friday | Perjantai 15.4.2016 (Swedish Time)

10:00 **Ship arrives to Stockholm | Laiva saapuu Tukholmaan**

Site Visits | Vierailut (in English)
10:00-13:15
Chair Raino Saarela, Finnish Society of Telemedicine and eHealth

10:00 **Site visits at Stockholm**
Bus transportation from Viking terminal to Site Visits

1. **New Karolinska Solna University Hospital, T5-project, data warehouse for vital signs**
2. **Assisted Living Technology and Applications Now and Future Foresight – Alleato Ab. Visit to Showroom Micasa.**
3. **Assessment of patietns for Assisted Living: @Home Unit, Rehabilitation Department, Danderyd Hospital**

Returning to the Viking terminal

13:15 **Lunch, coffee break and exhibition**
M/S Viking Mariella, deck 8, conference

Sessio 4: Yhdistyykö vai eikö yhdisty? (Session in Finnish)
14:00-15:40
Puheenjohtaja: Tutkimusryhmän vastaava Elina Kontio, Turun ammattikorkeakoulu

14:00 **Apottin yhteensopivuusvaatimukset**
Toiminnan kehitysjohtaja Antti Iivanainen
Oy Apotti Ab

14:10 **UNA –hanke, tuleva SOTE-tietojärjestelmä kumppanina**
Tietohallintojohtaja Ari Pätsi
Etelä-Pohjanmaan sairaanhoitopiiri

14:20 **ODA –hanke, omahoidon digitaaliset arvopalvelut**
Projektipäällikkö Hanna Nordlund
Espoon kaupunki

14:30 **Yritysnäkökulma, tuoteintegraatio**
Toimitusjohtaja Tapani Jokinen
Medixine Oy

14:40 **Interaktiivinen paneelikeskuskelu**
Toiminnan kehitysjohtaja Antti Iivanainen, Oy Apotti Ab
Tietohallintojohtaja Ari Pätsi, Etelä-Pohjanmaan sairaanhoitopiiri
Projektipäällikkö Hanna Nordlund, Espoon kaupunki
Toimitusjohtaja Tapani Jokinen. Medixine Oy
Kehittämispäällikkö Anna Kärkkäinen, Terveyden ja hyvinvoinnin laitos / Oper

15:20 **Uutuuksia yritysmaailmasta | Innovations from Corporations**
- RemoteA AB
- Polycom, Inc.

15:40 **Posteriesitykset, kahvitauko ja näyttely | Coffee break and exhibition**

16:30 **Ship Leaves Stockholm | Laiva lähtee Tukholmasta**

Sessio 5: Mitä oikeasti tapahtuu? (Session in Finnish)
16:30-17:50
Puheenjohtaja: Yliopettaja Paula Lehto, Laurea-ammattikorkeakoulu

16:30   **Uutuuksia yritysmaailmasta | Innovations from Corporations**
- Kuopio Innovation Oy
- OuluHealth

16:50   **Minun terveyteni, case Hämeenlinna**
Palvelusuunnittelija Ilona Rönkkö
Hämeenlinnan kaupunki

17:10   **Mobiilikirjaus erikoissairaanhoidossa**
Sairaanhoitaja Juha Roni
Turun yliopistollinen keskussairaala

17:30   **Kuvallinen etähoito**
Pohjoisen palvelualueen johtaja Anna-Liisa Lyytinen
Helsingin kaupunki

Session 6: eHealth Roadmap (Session in English)
18:00-18:35
Chair: Senior Advisor Arto Holopainen, Kuopio Innovation Oy

18:00   **Keynote: Future Visions for eHealth**
President Andy Fischer
International Society for Telemedsicine and eHealth

18:30   **Summary and Closing Words | Yhteenveto ja seminaarin päätös**
President | puheenjohtaja Arto Holopainen
Finnish Society for Telemedicine and eHealth | Suomen Telelääketieteen ja eHealth seura ry

18:35   **General Assembly of Finnish Society of Telemedicine and eHealth**
          Suomen Telelääketieteen ja eHealth seura ry:n vuosikokous

20:00   **Buffet Dinner | Illallinen**
Viking Buffet, deck 7 | kansi 7

Saturday | Lauantai 16.4.2016 (Finnish time)

10:10   **Ship arrives to Helsinki | Laiva saapuu Helsinkiin**

Suomen Telelääketieteen ja eHealth seura ry
Nordic eHealth 2016 - XXI Kansallinen telelääketieteen ja eHealth seminaari

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Abstracts of oral presentations / Luennot

Finnish Society of Telemedicine and eHealth
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Session 1: Opening Session

Chair Anne Kallio

Thursday April 14th, 2016

13:00 – 14:40

1-1   **Opening address by the Finnish Society of Telemedicine and eHealth**
Arto Holopainen, President
Finnish Society of Telemedicine and eHealth

1-2   **Greeting from the Ministry of Social Affairs and Health, Finland**
Päivi Sillanaukee, Permanent Secretary
Ministry of Social Affairs and Health, Finland

1-3   **EU eHealth Strategy**
Tapani Piha, Head of Unit, Cross-Border Healthcare & eHealth
European Commission

1-4   **A look at progress on the development of eHealth in the WHO European Region**
Clayton Hamilton, Unit leader for eHealth and Innovation
WHO Regional Office for Europe

1-5   **Delivery of Finnish National eHealth Award**

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Finnish Society of Telemedicine and eHealth opening words
Arto Holopainen, President
Finnish Society of Telemedicine and eHealth

Biography Arto Holopainen
Mr. Arto Holopainen, M.Sc (Tech.) is Senior Advisor at Kuopio Innovation Ltd., President at Finnish Society of Telemedicine and eHealth, Secretary at European committee for standardization (CEN)/TC251/WGII, Board member and Liaison - International and Regulatory Affairs at Finnish Medical Technology Association. He has more than 18 years of experience in the development and implementation of eHealth and mHealth solutions. He is promoting the use of international standards and following closely regulatory development in the eHealth domain. He is member of IEEE Personal Health Devices working group as well as member of ISO/TC215. He is working with startups to create new global business innovations and to help existing companies to grow as well as to advance cooperation between public, private and third sector. He has also had an opportunity to influence many international conferences as an invited lecturer.

Digitalisation challenges healthcare

The experimentation culture is quite typical for digitalisation and provides more agile and flexible development methods alongside with proper planning, preparation, foresight and preparedness that are more common in healthcare. This new way of doing challenges healthcare and at the same time it provides an advantage of digitalisation in modernizing services effectively. Experimentation culture highlights the importance of decision-making, managerial and personnel commitment as well as new business in order to achieve permanent changes as well as open-minded and forward-thinking attitude.

Nordic countries are at the forefront of the world in digitalisation of health care and have special position as examples of eHealth sector living labs. All Nordic countries have common interests and it is important to exchange information to maintain common directions in the development of services and also to meet needs of business life.

As the eHealth is a strategic priority in all the Nordic countries, we have great opportunity upon us:
- To promote Nordic collaboration in eHealth sector by sharing knowledge, experiences and best practices in order to strengthen Nordic competence in this sector
- To develop and evaluate joint Nordic indicators for eHealth development and to share knowledge of current implementations to the Nordic decision makers, developers, users of services as well as to Nordic business life
- To build broader Nordic reference development platform to enable future digital health services

Greeting from the Ministry of Social Affairs and Health, Finland
Päivi Sillanaukee, Permanent Secretary
Ministry of Social Affairs and Health, Finland

Biografia Päivi Sillanaukee
LT Päivi Sillanaukee nimitettiin kansliapäälliköksi sosiaali- ja terveysministeriöön vuonna 2012. Vuosina 2008 -2012 hän toimi sosiaali- ja terveysministeriön, sosiaali- ja terveyspalveluosaston osastopäällikkönä. Hän on toiminut aikaisemmin myös Tampereen sosiaali- ja terveysasioista vastaavana apulaiskaupunginjohtajana ja vuosina 1990 -2004 useissa ei tehtävissä Pirkanmaan sairaanhoitopiirissä. Tampereen kaupunginvaltuuston jäsenenä hän toimi vuosina 2001 -2004.

Päivi Sillanaukee on osallistunut useiden EU- ja kansainvälisten tahojen työhön ja ohjaa nyt sosiaali- ja terveysministeriön kansainvälistä toimintaa. Vuonna 2015 hän toimi puheenjohtajana Global Health Security Agenda -ohjelmassa, joka tukee maita potilasturvallisuuden kehittämisessä arvioinnin ja konkreettisen sekä taloudellisen tuen avulla. Hän asuu Tampereella ja harrastaa musiikkia, lenkkeilyä, avantouintia ja matkailua

Biography Päivi Sillanaukee
Dr Päivi Sillanaukee was appointed as the Permanent Secretary at the Ministry Of Social Affairs and Health in 2012. Between 2008 and 2012 she was the Director General of the Department for Social and Health Services at the Ministry. Prior to that, she was the Deputy Mayor and the Director of Social and Health Services in the City of Tampere. Between 1990 and 2004 she has held various clinical and managerial positions on the Pirkanmaa Hospital District. She was a member of the Tampere city Council in 2001 – 2004

Dr Sillanaukee, MD, PhD, is a specialist in public health and management from the University of Helsinki. Her academic work ranges from health administration to integrated treatment chains and cost of care. She has an Executive MBA from the University of Tampere. Dr Sillanaukee has participated in the work of several EU and international bodies and supervises now also the international activities of the Ministry of Social Affairs and Health. In 2015 Dr Sillanaukee was the chair of the Global Health Security Agenda, a programme based on an initiative of the United States of America, which supports countries in capacity development for health security through assessment as well as concrete and budgetary support.

Finland is now in an exciting situation with a lot of developing possibilities while we are reforming the way our healthcare and social welfare is arranged. In this reform our focus is in people, functional changes and effectiveness of services. Our target is to build customer-oriented and integrated cross-organizational services so that the service chain works smoothly for the customer.

In order to gain this the information produced by customers themselves, professionals as well as administrative information has to be available when needed. Furthermore the information has to be in a standard format so that it can be used outside of producing systems.

For professional healthcare information this is already working today with Kanta-services. Over 4,8 M people have patient information in Kanta patient information repository and far over 95% of prescriptions are ePrescriptions and can be found in the Prescription center. Citizens can view their information at MyKanta Pages.

In the future also social welfare information is available in Kanta services. MyKanta Pages will have PHR-functionalities so that people can produce themselves health information to MyKanta Pages, for example different measurements, drug side effect etc. for their selfcare and owncare purposes.

With healthcare and welfare reform we need quality and effectiveness information of services. The information collected to Kanta services will be used for development and management of health and welfare services as well as for scientific research. Indicators for eHealth usage and benefits are developed in cooperation with OECD in Nordic eHealth Research Network which is a subgroup of eHealth group established by the Nordic Council of Ministers.

EU eHealth Strategy
Tapani Piha, Head of Unit, Cross-Border Healthcare & eHealth
European Commission

Biography Tapani Piha
Tapani Piha works as Head of Cross-Border Healthcare & eHealth Unit in the European Commission. In addition to the implementation of the Directive on Patients' rights in cross-border health care, the Unit deals also with data management and protection in healthcare, health workforce and patient safety. Since 2001 in the Commission, he has been responsible for Health Technology Assessment (HTA) policy, health strategy, health information, expert advice for health systems, health law, health research coordination, and - human resources.

Before joining the Commission, he carried out epidemiological and intervention research on health behaviours and cardiovascular disease. He held positions at the Finnish Ministry of Health, and coordinated Finland's EU policies in health in 1995-2001. At the WHO Regional Office for Europe in 1989-94 he was responsible for the Action Plan for a Tobacco-free Europe.

EU eHealth Strategy – Promoting innovation and connecting health systems

The European Union has promoted digital solutions for health since the 1990s through the research programmes. In the 2010s the focus broadened to deployment in health care.

The eHealth Action Plan in 2012 outlined the strategy until 2020. The mid-term evaluation of the Action Plan is underway.

As a part of the EU Digital Single Market Strategy, the Commission is working on solutions for the strong development and deployment of mHealth, such as the Code of Conduct on privacy to assist software developers.

In order to promote exchange of health data between the Member States, the eHealth Network of the Member States has adopted three guidelines, building on the experience from the epSOS and EXPAND projects.

In 2015, the EU launched work for setting up a Digital Service Infrastructure (DSI) for Health, co-financed under the Connecting Europe Facility (CEF). The eHealth DSI will create the technical and organisational basis for concrete cross-border exchange of patient summaries and e-prescriptions. Member States will need to setup their National Contact Points for eHealth and the Commission will build the core services.

In parallel, the Commission has launched a call for establishing European Reference Networks, which will have a strong cross-border telemedicine component.

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A look at progress on the development of eHealth in the WHO European Region

Clayton Hamilton, Unit leader for eHealth and Innovation
WHO Regional Office for Europe

Biography Clayton Hamilton
Mr Clayton Hamilton leads the eHealth and Innovation portfolio of the WHO Regional Office for Europe, providing support and guidance to eHealth development and capacity-building initiatives as a component of Health Information and Health System development in the Region's 53 Member States. With a background in ICT development and business management within WHO that spans a 19 year period, and within the framework of the United Nations Sustainable Development Goals and the European Regional Health 2020 policy, Mr Hamilton leads the strategic implementation in the WHO European Region, linking with major international partners and networks to provide independent advice and assistance to countries for developing sustainable national eHealth and Innovation solutions.

In this presentation, we will take a look at the results and trends of the recently published WHO report From innovation to implementation – eHealth in the WHO European Region 2016 and examine how eHealth has transitioned to a subject of strategic importance for policy-makers. We will look at eHealth's role in underpinning the achievement of universal health coverage and how this contribution is clearly recognized by Member States in Europe as being fundamental to the sustainability and future growth of their own national health care sectors.

Finnish National eHealth Award

Finnish National eHealth award is delivered by President and Secretary of the Finnish Society of Telemedicine and eHealth.

The Board of Finnish Society of Telemedicine and eHealth delivers annually national eHealth award. The award is based on significant accomplishments in the field of telemedicine and eHealth. The required activity can be for example a doctoral thesis in this area or some other important activity in the national or international level supporting the society's goals. The award is delivered during annual Finnish national conference on telemedicine and eHealth. In the year 2016, Finnish national eHealth award is delivered 13th time.

eHealth award arguments:

The Board of Finnish Society of Telemedicine and eHealth decided to deliver Finnish National eHealth Award at the 21st Finnish National Telemedicine and eHealth Conference emphasizing pioneering research.

PhD Teija Norri-Sederholm's doctoral thesis "On top of the situation! From information needs to shared knowledge - Emergency response centre operator's and paramedic field supervisor's situational awareness" dissemination on social sciences and business studies was held on 14th of February 2015 at University of Eastern Finland. Norri-Sederholm describes in this pioneering research the formation of emergency response centre operator's and paramedic field supervisor's situational awareness.In recent years there have been major reforms in Finland related to emergency response centre and paramedic services. The importance of paramedic services has increased, while the number of on-call positions has decreased, therefore, to research the topic was important.There is very little research done related to the situational awareness of emergency response centre and paramedics services in Finland and abroad. Similarly, the emergency response centre and paramedics services operational activities have been studied very little. Operational managing of paramedics' resources in the hospital district area is still very important in order to maintain functional services. Situational awareness is the core in emergency response centre operator's and paramedic field supervisor's operational work. The functionality of information flow in the formation of situational awareness is especially emphasized in multi-authority cooperation.

The dissertation is the first of its kind in Finland, and it has received a lot of positive media coverage, but also works well as a reference material for various training.

Link to the publication: http://urn.fi/URN:ISBN:978-952-61-1694-5

Kansallinen eHealth tunnustuspalkinto

Kansallisen eHealth tunnustuspalkinnon jakaa Suomen Telelääketieteen ja eHealth seuran puheenjohtaja ja sihteeri

Suomen Telelääketieteen ja eHealth seuran hallitus jakaa vuosittain eHealth -tunnustuksen. Palkinnon saamisen kriteereinä on erityisen ansiokas toiminta telelääketieteen alueella, joksi katsotaan esimerkiksi telelääketieteen ja/tai eHealth alaan kuuluva väitöskirja tai muu erittäin merkittävä seuran tavoitteiden mukainen toiminta kansallisella tai kansainvälisellä tasolla. Palkinto jaetaan vuosittaisen kansallisen seminaarin yhteydessä. Vuonna 2016 eHealth-tunnustuspalkinto jaetaan kolmannentoista kerran.

eHealth-tunnustuspalkinnon perusteet:

Nyt käsillä olevana konferenssin 21. vuonna seuran hallitus päätti jakaa eHealth-tunnustuspalkinnon painottaen uraauurtavaa tutkimusta.

FT Teija Norri-Sederholmin sosiaali- ja terveydenhuollon tietohallinnon alaan kuuluva väitöskirja *"Tilanne päällä! Tiedon tarpeesta jaettuun tietoon: hätäkeskuspäivystäjän ja ensihoidon kenttäjohtajan tilannetietoisuus"* tarkastettiin 14.2.2015 Itä-Suomen yliopistossa. Norri-Sederholm selvitti uraauurtavassa tutkimuksessaan ensihoitopalveluun ja hätäkeskustoimintaan liittyvää tilannetietoisuutta. Hätäkeskustoiminnassa ja ensihoitopalvelussa on tapahtunut Suomessa viime vuosina isoja uudistuksia ja ensihoitopalvelun merkitys on korostunut, kun päivystyspaikkojen määrä on vähentynyt, siksi aiheen tutkiminen oli tärkeää. Ensihoitopalveluun tai hätäkeskukseen liittyvää tilannetietoisuutta on tutkittu sekä Suomessa että ulkomailla melko vähän. Samoin hätäkeskustoiminnan ja ensihoitopalvelun operatiivista toimintaa on tutkittu tieteellisesti varsin vähän. Sairaanhoitopiirin alueella toimivien ensihoidon resurssien operatiivinen hallinta on jatkossakin tärkeää palvelujen toimivuuden kannalta. Hätäkeskuspäivystäjän ja ensihoidon kenttäjohtajan hyvä tilannetietoisuus operatiivisessa toiminnassa on keskeistä. Tilannetietoisuuden muodostumisen kannalta olennainen tietovirtojen toimivuus korostuu erityisesti moniviranomaisyhteistyössä.

Väitöskirja on ensimmäinen laatuaan maassamme, ja se sai runsaasti myönteistä medianäkyvyyttä, mutta toimii hyvin myös ohjausmateriaalina eri koulutuksissa

Linkki julkaisuun: http://urn.fi/URN:ISBN:978-952-61-1694-5

Session 2: mHealth Serving Citizens

Chair Jarmo Reponen

Thursday 14th of April 2016

15:00 – 17:10

2-1   **My Kanta and Personal Health Record**
Teemupekka Virtanen, Senior Advisor
Ministry of Social Affairs and Health, Finland

2-2   **Iceland National eHealth Services**
Guðrún Auður Harðardóttir, Project Manager
Directorate of Health, Iceland

2-3   **Tele Health in Oslo**
Maria Helseth Greve, Project Manager
Hanne Eggen, Consultant
City of Oslo

2-4   **Danish Intersectoral Collaboration in Home Monitoring for COPD**
Tina Archard Heide, Chief Project Manager
TeleCare Nord, Aalborg

2-5   **Swedish EHR Online for Citizens**
Maria Pettersson, Project Manager
Inera AB

2-6   **Nordic eHealth Benchmarking**
Hannele Hyppönen, Research Manager
National Institute for Health and Welfare, Finland

My Kanta and Personal Health Record

Teemupekka Virtanen, Senior Advisor
Ministry of Social Affairs and Health, Finland

Biography Teemupekka Virtanen
Teemupekka Virtanen (Ph.D, Adj. Prof) has worked at the Ministry of Social Affairs and Health for almost 10 years. During this time he has been the chief security officer of the national eHealth systems, the head of the nationals eHealth projects and currently he is leading the project building new generation electronic services for citizens. Dr. Virtanen has a mixed background. The roots are in electronics and computers but MBA in security management and qualification of secondary school teacher makes a change from technology to education, psychology and management. In addition he has senior officer level military education The career is as mixed as the education. Security has been the main point but there has always been innovative thinking and process development in a big role. The information security manager in the Prime minister's office but in the same time building new generation Internet services for the Prime minister and the President. The Chief information security officer of the Finnish Defence forces. The chief of security in the biggest national media company developing its Internet based media. A professor of security and Internet based systems. And now a project manager who must change the way of thinking in social- and healthcare

Finland has been one of the leading countries in healthcare informatics for several decades. First electronic patient record systems were taken into use early 80'. The public healthcare has reached the full coverage already long ago and coverage in private service providers is high also. This situation in frontline has made it possible to build national level systems to share, storage and use information in a new way. There are electronic prescribing system and national patient records repository both of which have reached already very good coverage and popularity.

There is now time to take a leap forward. According the national strategy for next years the role of people themselves are emphasized. We believe that people who are interested in their own wellness are healthier. In general people are only small part of their life patient. We want to support them living health life and stay away from the healthcare. In the same time patients participate more and more the care. Patient role increase from passive object to an participating actor. To support this change we have decided to build a new set of national services to support people to take care of their wellness and their own activity.

Kanta is the name of services for professionals. We have decided to call the new services as My Kanta. The name has already been in use meaning view to the patient records stored in Kanta but we now extend the service. In addition to the existing service there will be three new components: PHR, public services and innovation platform. PHR is the database to store all wellness information. Public services are those electronic services that are arranged by healthcare providers. Innovation platform gives companies a possibility to build and offer new kinds of wellness related services.

The PHR is now under construction and it is already possible for service providers to test their services in this environment. For public PHR is available late 2017. The first set of public provided services is now under construction and will be available late 2017.In the innovation area we are still looking for a partner to operate such a system.

Iceland National eHealth Services
Guðrún Auður Harðardóttir, Project Manager
Directorate of Health, Iceland

Biography Guðrún Auður Harðardóttir
Gudrun is a project manager at the Directorate of Health in Iceland, working on the development and implementation of an EHR and PHR at a national level. She has worked in health care for over 30 years, and has extensive experience in clinical work, administration, teaching and development and implementation of EHR's. The past ten years she has worked at the policy level, first at the Ministry of Health and currently at the Directorate of Health. She has served on several eHealth committees, locally and internationally. She has a BSc in Nursing from the University of Iceland and a PhD in Health Informatics and administration from the University of Iowa, USA.

There are increased demands worldwide to accelerate the use of eHealth solutions within health care. Furthermore, there is emphasis on person-centred health care and the need for patients to be more informed and involved in their own treatment.

The Health Records Act (No. 55/2009) in Iceland states that the patient has the right to access his/her own health record. Furthermore, the eHealth policy supports secure digital access for citizens to there own health information whenever and wherever needed.

The Directorate of Health is in charge of all national eHealth projects. This involves implementation and promoting the use of eHealth applications within health care on a national level. The ultimate goal is to enhance patient safety and quality of care with efficient use of financial resources. One of the projects is the development and implementation of the national citizen health portal.

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Tele Health in Oslo
Maria Helseth Greve, Project Manager and Hanne Eggen, Consultant
City of Oslo

Biography Maria Helseth Greve
Maria Helseth Greve is educated a registered nurse from Oslo, Norway. During her studies she exchanged to Flinders University Australia. With diverse other experiences such as working as a chef in Paris, Greve is up for a challenge. This comes in handy in her current position as project manager. She is currently working on a project which aims to incorporate telehealth and telecare in health care services in Oslo Municipality. Four city districts in Oslo collaborate and take part in the Norwegian National Program for Personal Connected Health & Care together. With hands-on experience in how health care is organized and delivered to the citizens, Greve functions as the project manager for the program in the city district of Gamle Oslo.

Biography Hanne Eggen
Hanne Eggen is educated a registered nurse from Oslo, Norway. She had a former posision as a Head of Department. She is currently working on a project which aims to incorporate telehealth and telecare in health care Services in Oslo Municipality. Four city districts in Oslo collaborate and take part in the Norwegian National Program for Personal Connected Health & Care together. With hands-on experience in how health care is organized and delivered to the citizens, Eggen functions as the project manager for the program in the city district of Grünerløkka.

On mission from the Norwegian National Program for Personal Connected Health & Care four districts in Oslo municipality started a cooperative project on telehealth and telecare in health care Services in the end of 2013. The local projects are mainly located in traditional home care and rehabilitation.

In the beginning the main focus was on implementing assistive technology, mostly electronic medicine dispensers and safety alarms in our service. The goal was to make the service more efficient, to save money and to increase the quality for the citizens and their experience of security.

Later on we found potential in providing remote care to citizens with chronic diseases. First in citizens who already where receiving some kind of service from our primary health care. In the next step we began to take on an even more preventive approach and include citizens that were new to us and probably wouldn't need our traditional health care servicer for several years. The technology includes a personal touch screen tablet connected wireless to medical measurements such as blood pressure, oximetry, spirometry, blood sugar levels, weight, and an individual questionnaire.

Intro International and The Oslo School of Architecture and Design have followed the project with research and there is interesting results found in both quality and quantity.

In a 6 months period the time used for visits in home care service was reduced by up to 39% with the use of electronic medicine dispensers and up to 30% with remote care. By collecting data from the local hospital it was found that hospitalizations in this group had been reduced by 20% and the number of days each hospital admission by 25%. The Policlinic consultations were reduced by 32%. In interviews many citizens expressed increased quality of live and a experience of safety and control.

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Danish Intersectoral Collaboration in Home Monitoring for COPD
Tina Archard Heide, Chief Project Manager
TeleCare Nord, Aalborg

Biography Tina Archard Heide
Archard Heide was the Chief project manager of TeleCare North in the north Denmark region, and are now responsible for the telemedicine service center, established to continue the telemedicine services created in the project. Tina Archard holds a master degree in information science and communication from the University of Aarhus 1994, and a master degree in leadership and organizational psychology, from the University of Aalborg 2012. Tina has been working within digitalization of public sector and healthcare for 20 years.

The lecture gives an insight into the experiences from the TeleCare North project, an ambitious, large-scale telemedicine project where all healthcare professionals in the system engaged in interdisciplinary telemedicine collaboration. The project involved the municipalities of North Jutland, The North Denmark Region, the GPs and 1400 COPD patients, and was the first and largest project in Denmark of its kind.

The project succeeded with cross-sectorial cooperation, due to common goals and unprecedented collaboration, and the research results gives new knowledge of health economies gains, patient empowerment and other potentials.

The home monitoring of COPD patients now continues in the north Denmark region , and at National implementation of home monitoring to COPD patients has been decided.

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Swedish EHR Online for Citizens
Maria Pettersson, Project Manager
Inera AB

Biography Maria Pettersson
Maria Pettersson works at Inera AB, county councils and regions common e-health organization. She works as a project manager as well as the services responsible for the service Journalen-EHR online for the citizens. She has worked in the field of eHealth in many years for the county councils and former project manager of the EU project Sustains that is the start of this service

Swedish EHR Online for Citizens

Half a million reads their medical record online in Sweden! It is through the national service Journalen owned and managed by Inera. Today there are 11 county councils / regions showcasing their information for patients and the remaining county councils are planning to join in 2016.

The public has amassed a great deal of experience in dealing with e-services of various kinds. They have also made significant investments in both computers and network connections in homes. The health care sector has been slow in utilizing this relationship. The causes have been that the medical record itself is confidential and more difficult to share than a bank account or a ticket order.

To cope with the increased need for care and living up to the demands and expectations of availability that the patient have it means that we had to have services to access their own personal health information, make appointments, renew prescriptions mm.

The patient needs to be able to take part of the test results, both for herself and for the relatives and the caregiver don`t need to provide the patient about information where the referral is in the care chain. The patient must be able to make contact with the care, follow their health and receive information regardless of time and place

The national infrastructure that is built up allows patients across the country receive a relatively comprehensive picture of their health care regardless of where they visited the medical facilities or county / region. For the healthcare, it means that a decreasing extent to manually answer the question of referral's status, print and mail the records, fill out forms prior to the visit, his journal, etc.

Journalen intended to:
- Increase patient access to their own health information.
- Patient empowerment
- Improved health
- Streamline and simplify the contact for faster disposal
- Better access to healthcare

Nordic eHealth Benchmarking
Hannele Hyppönen, Research Manager
National Institute for Health and Welfare, Finland

Biography Hannele Hyppönen
Hannele Hyppönen, PhD, acts as research manager in National Institute for Health and Welfare Information Department. Her expert area is eHealth benchmarking and evaluation. She has a long experience in clinical work (physiotherapy, specialized in ergonomics and public health), a master's degree (social psychology and organizational learning) and doctorate in University of Helsinki (organizational learning and sociology of technology). She has worked as a researcher, development manager and research manager in the Unit of eHealth and eWelfare in National Research and Development Centre for Welfare and Health (STAKES) since 1996 and in National Institute for health and Welfare since 2009. Current activities include leading of the Nordic eHealth indicator development work under the Nordic Council of Ministers, and leading the STEPS -programme for national eHealth benchmarking commissioned by the Ministry of health and social affairs.

Introduction

The Nordic Council of Ministers (NCM) established an eHealth group in 2010 for knowledge transfer between the Nordic countries and Faroe Islands, Greenland and Åland, to strengthen the Nordic global leadership position in the eHealth area and to raise awareness of eHealth as an instrument for modernisation of the health care systems. In 2012, the eHealth group established a subgroup – The Nordic eHealth Research Network (NeRN) – to develop, test and access a common set of indicators for monitoring eHealth in the region to be used by policy makers and scientific communities in supporting development of Nordic Welfare. The National Institute for Health and Welfare (THL) was selected as a coordinator of the network [1].

Methods

In the first mandate period (2012-2013), a four-phase methodology was developed and tested for eHealth indicator definition: 1) Defining the context (key stakeholders and the relevant area or system), 2) Defining the goals for monitoring 3) Defining methods for indicator selection and categorisation, and 4) Defining the data, reporting results and feedback. eHealth policy analysis, existing national surveys, the OECD priorities and stakeholder priorities were compared to select relevant functionalities and goals to monitor. Indicators were grouped using existing frameworks from the literature. The practical indicator definition work was aligned with the OECD eHealth indicator development, which coincided with establishment of the NeRN group. The work was focused on Information Exchange (HIE) and Personal Health Record (PHR) and Patient Portal-related indicators. [1] In the second mandate period (2013-2015) the altogether 49 of common indicators were defined [2]. The current mandate period (2015-2017) focuses on long-term management of the benchmarking information as well as on defining common Nordic indicators for monitoring citizens' use and experiences of eHealth services.

Results

The national eHealth monitoring surveys, log and register data were used as sources for common Nordic eHealth indicators. Altogether 9 HIE and PHR-related indicators for health care structural (or input) performance were defined under eHealth availability and (technical and information) quality domains. HIE and PHR –related health care process performance indicators included intensity of HIE and PHR use (16 common indicators), user satisfaction (6 common indicators) and impacts on conformity to care guidelines (1 indicator). Of the 7 HIE and PHR-related health care output and outcome performance indicators, 6 measure respondent's view of HIE and PHR impact on health care outcomes. One register-based indicator was defined in the domain of (ePrescription-related) medication safety. [2]

Conclusions

The work represents the first systematic analysis and benchmarking of selected eHealth functionalities in the Nordic countries. Comprehensiveness and comparability of the monitoring data for the commonly defined variables, and shifting emphasis on benchmarking HIE and PHR impacts on health care outputs and outcomes remain challenges for future work.

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[2] Hyppönen H, Kangas M, Reponen J, Nøhr C, Villumsen S, Koch S, Audur Hardardottir G, Gilstad H, Jerlvall L, Pehrsson T, Faxvaag A, Andreassen H, Brattheim B, Vimarlund V, Kaipio J. Nordic eHealth Benchmarking. Tema Nord 2015:539 http://norden.diva-portal.org/smash/get/diva2:821230/FULLTEXT01.pdf

Session 3: Solutions with Innovation Actions

Chair Pirkko Kouri

Thursday 14th of April 2016

17:40 – 19:35

3-1 **Co-creation for New health Technology Innovations**
Tom Ståhlberg, Director
Healthtech Finland

3-2 **Promoting Innovation for Future Health**
Jenni Nordborg, Director
Sweden's Innovation Agency VINNOVA

3-3 **Public-Private-Partnership – case OuluHealth**
Juha Korpelainen, Chief Administrative Physician
Oulu University Hospital

3-4 **Nursing eHealth Strategy to Support Innovation Actions**
Outi Ahonen, Senior Lecturer
Laurea University of Applied Sciences

3-5 **eHealth Innovations in Practical Nursing**
Elisabeth Strandberg, Senior Adviser
Swedish Society of Nursing

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Co-creation for New health Technology Innovations
Tom Ståhlberg, Director
Healthtech Finland

Biography Tom Ståhlberg
Present position, Managing Director (acting) and Director, Regulatory Affairs and Compliance, Finnish Health Technology Association. Previously, worked at PerkinElmer Ltd. 1986-2012, first half in international marketing and second half in quality management, regulatory affairs and last position Director, Government Affairs. M.Sc. in biochemistry and graduated professional teacher. 33 scientific articles and 52 scientific abstracts. Member of the regulatory affairs committees of COCIR and EDMA. Actively participation in several standardization committees (ISO 210, ISO 212, CEN 140, Clinical and Laboratory Standards Institute and the joint CEN/CENELEC Advisory Board for Health Standards). Frequently invited speaker and chairman at seminars.

Co-creation for new health technology innovations

Software have been included both in the US FDA medical device (MD) regulation and in the EU MD Directives since the 1990s. Originally, the emphasis was on embedded software included in various MDs or e.g. in instruments used for analysing in vitro diagnostic samples. However, gradually stand-alone software were developed and defined as MDs, and especially with the emerging and nowadays extremely fast growing field of mobile health applications, the regulatory framework became very complex and difficult to grasp. The field of telemedicine and eHealth is developing into such new spheres that ten years ago they would have been considered science fiction – it is, therefore, understandable that the regulations and authorities are often a few steps behind.

Still, basically the same regulatory concepts are applicable to all kind of software, regardless if it is a traditional embedded software or if it is a mobile health apps used e.g. as a health game. As soon as the software meets the definition of a MD, the same rules apply. The intended use is the key and must be clearly linked to the patient and the medical situation. The software must be classified according to its risk and depending on this, a conformity assessment must be fulfilled before the declaration of conformity can be signed and the product can be registered as a medical device in EU. The risk classification is also decisive whether a quality management system must be developed or if a notified body must be involved in the assessment. The key drivers are patient safety and efficiency, i.e. that the product is fit for its intended use. Additionally, data security must be considered one of the key drivers for software medical devices.

Thus, any new health technology innovation cannot be created as a technical innovation alone. On the contrary, a new MD software innovation is always the co-creation with all stakeholders involved. The patient directly or as indirectly represented by the physician or other health care providers must always be considered the focus. Without a clearly defined patient and medical question, the most vital design input is lost. This must be included with other critical user requirements specifications before the initiation of the product development work. Not until then, these requirements can be developed into product specifications, which thereafter are to be developed, verified and validated throughout the product development process. This includes not only the product as such but also the interface between the MD and the user, i.e. the usability. A very critical part of this process is the clinical assessment which includes for higher risk classification products also clinical studies. MD software have no extra freedom, but must follow the same regulatory path as any MD. Admittedly, this requires an extremely thorough understanding of the regulatory requirements in order to apply general rules to specific software products.

Although, the general regulatory path applies to any software, there are peculiarities to be considered. E.g. mobile health apps in the USA have been in a US FDA guidance document divided into those that are strictly considered to be regulated as any MD and into those that are of such low risk that enforcement discretion is promised – in practice, it means that few regulatory demands are put on these low risk mobile medical apps. The pros and cons of this kind of division will be discussed in the presentation. There are also special additional demands put on MD software. E.g. cybersecurity has to be handled properly, especially if the aim is the US market – the first rejections of software MD 510(k) applications have been given in 2015 also for Finnish products. And, the same emphasis on cybersecurity is developed in the EU in 2016.

MD software cannot be developed in a vacuum as a new health technology innovation alone. The starting point must be a thorough understanding of the patient and the medical question. The user and potentially third parties must also be considered in the product development process. Thus, the MD software development is always a co-creation with the patient/user, the manufacturer and the authorities. And, the story is not finished when the MD software has been put on the market, but the responsibility must be maintained throughout the product life cycle, e.g. all rigid post-market surveillance requirements and possible vigilance situations. The manufacturer can live up to these demands only in cooperation with all stakeholders involved.

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Promoting Innovation for Future Health

Jenni Nordborg, Director

Sweden's Innovation Agency VINNOVA

Biography Jenni Nordborg

Jenni Nordborg, PhD, is Director and Head of the Health Division at VINNOVA, the Swedish Governmental Innovation Agency. She has since 2006 been active in strategic innovation policy development and implementation within health and life science at VINNOVA. This includes leading European collaboration between innovation agencies to develop and implement policy for higher growth in SMEs. Dr. Nordborg has a research background from Chalmers University of Technology and worked at several international high-level research facilities in Japan, USA, Australia and Europe. She has experience in start-up, management and marketing and sales of a growing high-tech business with global market. She also has experience in board level positions both in private companies and governmental organizations and is board member of the Linnaeus University.

Promoting Innovation for Future Health

VINNOVA, the Swedish Governmental Agency for Innovation Systems, is an agency operating under the Ministry of Enterprise and Innovation. Our vision is for Sweden to be a world-leading country in research and innovation, and an attractive place in which to invest and conduct business. We promote collaborations between companies, universities, research institutes and the public sector.

The health ecosystem is challenged by healthcare efficiency and the need for new business models in life science. The need for development and changes is obvious but challenging. Legal aspects of gathering, save and use digital data is just one of many matters to solve. Cross-cutting collaboration between health care and digital technology play an important role for future health, in order to secure data and maintain or increase the quality of care and health for patients. There are great opportunities in the convergence of several sectors and it is critical to think exponentially. Digitalization of health and life science will profoundly change the way we do business and research and deliver care.

The changing competitive landscape puts new demands on collaboration between academia, industry and the public sector to develop innovative solutions. Sweden needs to develop an attractive health ecosystem where the academia, the health care sector and industry collaborates to develop new innovative solutions and competences. VINNOVA's mission is to contribute to this by supporting growing companies meeting global health needs, by supporting the growing innovation capacity in the public sector, and by strengthening user involvement and implementation in academic research.

Sweden joins forces for future health and lifescience - SWELife and Medtech4Health

The future of health and lifescience in Sweden is supported by two strategic innovation programmes, SWELife and Medtech4Health, with the common vision for Sweden to take a global lead through innovative collaborations to improve health and welfare. This is a long-term investment over 10 years with an annual budget of 100 MSEK from Vinnova, doubled by co-funding from industry and the public sector. The vision is for Sweden to be one of the world´s leading life science ecosystems, characterized by an effective and dynamic network of strong academic research environments, small companies, global life science industry and health care. This will contribute to increased research utilization, increased patient benefit and economic growth.

Highlights - digital health and next generation production of biologics

As part of the Swedish lifescience strategy the Government has given Vinnova special commissions to strengthen investments both in digital health and R&D and production of biopharmaceuticals.

- **Digital health**: The programmes SWELife and Medtech4Health are heading a collaboration between healthcare, home care, industry, regional and national authorities, academia aiming for a fully connected information system in healthcare - to unleash the potential of digital health. This includes how to implement a fully open framework based on international standards to enable semantic and systemic interoperability. To make this happen, change management and strong leadership   is   essential.

- **Biologics**: Vinnova and the Swedish Research Council together are starting up a new long-team funding programme for method development and bioproduction of future biological therapies. The overall goal is to strengthen Sweden´s position in this field, building knowledge, capacities and to further attract international leaders from both industry and academia.

Some other VINNOVA innovation tools that will be presented:
- **Boosting innovation capacity in the public sector.** An increased ability for innovation within the public sector is of vital importance for the development and improvement of the Swedish welfare system. This involves a variety of measures, from the development of management strategies and organisational/leadership solutions, to new methods for involving companies and the community in redefining the ways in which public services are delivered. Innovation Centers and Test beds within the Health Service support the development of ideas into needs-driven innovations from the health service nationally and within county councils and municipalities
- **Challenge driven innovation.** Many global societal problems cannot be solved via traditional solutions within specific industries and sectors. VINNOVA has identified four societal challenges that form the core of our strategies and our work: Future Healthcare, Sustainable Attractive Cities, Information Society 3.0 and Competitive Production. VINNOVA funds challenge-driven projects addressing essential or critical needs in society and industry through new, cross-sector collaborations.

Public-Private-Partnership – case OuluHealth
Juha Korpelainen, Chief Administrative Physician
Oulu University Hospital

Biography Juha Korpelainen
Juha Korpelainen (born 1959), was graduated MD in 1985 and a specialist in neurology in 1992, in University of Oulu, Finland. Korpelainen received his PhD in 1993, and was nominated as a docent of neurology at the University of Oulu in 1999. He also has an eMBA and a special qualification in social and health care management, and in medical rehabilitation. Juha Korpelainen has worked as a Chief Administrative Physician in Oulu University Hospital since 2005, and before that as a clinical neurologist since 1993. Korpelainen has a long experience in research, development and innovation activities in social and health care, and he is particularly interested in the utilization of technology in health care. Korpelainen is responsible for a long-term renovation program of the Oulu University Hospital. Academic activities: 97 scientific articles, supervisor of 8 doctoral and 9 master thesis.

Biografia Juha Korpelainen
Juha Korpelainen (s. 1959) on valmistunut Oulun yliopistosta lääketieteen lisensiaatiksi v. 1985 ja neurologian erikoislääkäriksi v. 1992. Korpelainen on suorittanut lääketieteen tohtorin tutkinnon v. 1993 ja hänet on nimitetty Oulun yliopiston neurologian dosentiksi v. 1999. Tämän lisäksi Juha Korpelainen on suorittanut sosiaali- ja terveysjohtamisen PD-tutkinnon ja eMBA-tutkinnon, ja hänellä on hallinnon pätevyys sekä kuntoutuksen erityispätevyys. Juha Korpelainen on työskennellyt Pohjois-Pohjanmaan sairaanhoitopiirin hallintoylilääkärinä vuodesta 2005.

OuluHealth ecosystem strives to be a forerunner in creating innovative solutions to global challenges in the health care sector, aiming for the efficient return of investments and, most importantly, for the creation of jobs and health.

OuluHealth is one of the five innovation ecosystems of Oulu Innovation Alliance. The OuluHealth ecosystem comprises several stakeholders from academia, the public sector, and the private sector. The principal idea is to facilitate open collaboration and to accelerate innovation by bringing together various partners able to contribute to the needs of the health care sector. The ecosystem approach enables the combination of expertise from wireless information technologies and life science to introduce smart ICT solutions for delivering advanced, personalized, connected health service solutions.

In physical terms, OuluHealth is located in Kontinkangas, a health campus close to the center of the Oulu city. The OuluHealth campus has developed around the Oulu University Hospital, opened in the 1970s, and is quite unique in the way that it compactly combines both public and private actors in the health care sector, ranging from Biocenter Oulu to a wide spectrum of small and medium-sized businesses.

How do the different organizations relate to each other? Oulu University Hospital chairs the OuluHealth board. BusinessOulu is in charge of the ecosystem collaboration facilitation and supporting the companies in growth and commercialization. Centre for Health and Technology, University of Oulu is responsible of coordinating research and innovation activities. OuluHealth Labs offers a unique innovation platform which enables citizen and professionals involvement. OuluHealth belongs to the international network of the European Connected Health Alliance. Through Nordic Test Beds project OuluHealth Labs offers also possibilities for testing product and services abroad.

OuluHealth Labs cover the whole sequence of health care from public and specialized care to education and home care solutions. OuluHealth Labs currently consists of three test bed facilities; OYS TestLab operated by Oulu University Hospital, Oulu CityLab operated by City of Oulu and Oamk SimLab operated by Oulu University of Applied Sciences. OYS TestLab is the newest lab environment in OuluHealth Labs concept, offering real hospital environment for product testing and development.

OYS TestLab is a development and test environment for companies to test and develop their products and ideas in an authentic hospital environment and with genuine users. Oulu University Hospital uses the laboratory to develop their processes and to model and simulate building projects for the Future Hospital programme.

OYS TestLab locates within Oulu University Hospital. The laboratory covers 300 square metres on two floors. Various hospital units can be built into open spaces: an operating theatre, clinics, wards, control rooms, waiting areas etc. TestLab has a 3D virtual space and capacity for testing 5G network. OYS TestLab was launched in October 2015.

Oulu CityLab was opened as a technology health centre Kaakkuri by city of Oulu in 2008. In addition to usual patient care, the present Oulu CityLab contributes in the development of technology-enhanced processes and provides companies basic healthcare environment for product testing and development.

Currently, testing operations will be extended to cover also other health services in the city, including private homes. Particular emphasis shall be placed on the development of Kontinkangas Wellbeing Centre test operations.

Oamk SimLab is a simulation and studio environment established by Oulu University of Applied Sciences and can be implemented as a test and development environment in product development for health technology and wellbeing services. Simulation testing requires no ethical licence. Also student input may be implemented for research and product development.

SimLab houses, among other equipment, computer-controlled patient simulators for the simulation of basic human functions, allowing for examination and treatment. The premises facilitate also state-of-art therapeutic appliances and equipment which is used in diverse ways for product development, testing, and training.

Nursing eHealth Strategy to Support Innovation Actions

Outi Ahonen, Senior Lecturer

Laurea University of Applied Sciences

Biography Outi Ahonen
Outi Ahonen (female) holds a Master´s degree in Health Care and Bachelor degree in Nursing Care (RN). She is Doctoral Student of Health and Human Services Informatics. Currently she is working in the eHealth RDI team at the Laurea University of Applied Sciences, Finland. She is working as project manager in project called "The Developer of Digital Health and Welfare Services". She has a long background in research and education in the field of Health Care and Nursing Informatics. Furthermore, she is the chairman of the Finnish Nursing Associations´ eHealth strategy group and a member of the Structural Patient Record Standardization group. Member in group of experts in Nationally uniform structured patient reports, the subgroup of Nursing. National Institute for Health and Welfare. Further she has been a project coordinator in the national development project eNNI (2007-2010) which focused on nursing informatics and regional development work.

Growing use of information and communication technology (ICT) demands have caused a need for nursing to strengthen the knowledge, skills and competences related to ICT in health (eHealth) and define its versatile roles. The Finnish Nurses Association (FNA) named a group of eHealth experts from various professional fields that are closely connected to nursing e.g. nursing practice, higher education, nursing research and administration. The main purpose was to describe nurses' contribution to the national strategy concerning eHealth development and implementation in health and social care. The group searched for answers, discussed strategic issues, wrote drafts, and sent texts for open commentary circles. The chosen themes of the eHealth strategies deal with the role of the client, nursing practice, ethical aspects education and eHealth competences, nursing leadership, knowledge management and research and development. In publishing on the web every theme has three goals and five actions to achieve the objectives of the theme in question. Strategy wants to give the citizen a more centered role in conducting his/her own process to better health with help of professionals when needed. Citizens are more and more involved in decision-making, sharing power and responsibility in their caring process. Nurses work closely with patients from hospital to home settings. This gives nurses a strong role in the multidisciplinary groups when innovating and developing citizen-centered new services.

Nurses' education in Finland is giving them good competence to take part in the development work. eHealth is the area where new services are developed each the time citizens and professionals need new skills, knowledge and competence to communicate, based on useful and trustful services. The security and ethical aspect are an important key element to e-Services.

FNA´s strategy wants to take part in the discussion. How can we all take full advantage of existing eHealth services and nurses will be developing e-Services nationally and internationally in multiprofessional groups? In EU´s single market, the main target and challenge to all EU countries is to create new possibilities in distributing eHealth services. Finnish nurses want to develop better health care services to all citizens in the EU.

The FNAs strategy pages https://sairaanhoitajat.fi/tyoryhma/ehealth/
The ICN:s eHealth pages http://www.icn.ch/what-we-do/ehealth/
The ISfTeH - International Society for Telemedicine & eHealth pages https://www.isfteh.org/about

eHealth Innovations in Practical Nursing
Elisabeth Strandberg, Senior Adviser
Swedish Society of Nursing

Biography Elisabeth Strandberg
Elisabeth Strandberg: RN, PhLic. Senior Adviser in eHealth and research politics at the Swedish Society of Nursing. She has conducted studies on research utilization and implementation science. Currently she participates in studies regarding a national professional language for structured nursing documentation, comparing the International Classification of Nursing Practice (ICNP) with the International Classification of Functioning, Disability and Health (ICF).

eHealth - a Strategy for Nurses, professional engagement in eHealth in Sweden

Background and aim: The Swedish Ministry of Health and Social Affairs has recently launched a Vision for eHealth. Swedish health care utilize information and communication technology to a high extent, and eHealth services offered to the public, health care personnel and health care organizations, is rapidly increasing. E-health solutions can support equity and access to health care, if health care personnel and patients have the required competence and access to use them. It is also essential that ethical values are respected. The Swedish Society of Nursing has prioritized working with eHealth on a national level. One example is the development of an eHealth strategy in nursing to promote the ongoing development.

Results: Nurses' role and responsibility in eHealth will be described as well as nurses' involvement in development and operationalization of eHealth on a national level. Presentation of the eHealth strategy in nursing, by the Swedish Society of Nursing, describing new competence requirements and changing professional roles. Efforts made to implement the eHealth strategy in nursing in clinical practice, nursing education and management will be discussed.

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Site Visits

Vierailut

Friday 15th of April 2015

Perjantai 15.4.2016

10:00 – 13:30

Site Visits / Vierailut

1. New Karolinska Solna University Hospital, T5-project, data warehouse for vital signs

New Karolinska Solna (NKS) is the project name for the state-of-the-art hospital currently under construction next to Karolinska University Hospital in Solna. The new university hospital will open its doors to the first patients at the end of 2016. NKS is being built to be able to meet the demands of the future in relation to health and medical care – with a greater focus on the patient's needs, faster provision of care, and increased patient safety with single rooms for all inpatients.

NKS will be part of the future care system that is based on all parts of the system interacting with each other. The demanding, highly specialised care at NKS is complemented by extended emergency hospitals and specialist care outside the emergency hospitals. Information services such as the Care Guide ("Vårdguiden") and communication between patients and care providers will lead to a more efficient care of the patient's actual needs.

Integration of a medical system to various IT-based data consumers is something that is expected to increase sharply in the future, because of the increasing digitization of healthcare. Today, expensive direct integrations between MT-systems and data consumers, are often done, e.g. medical equipment at ICU integration to GE CCC. The direct integrations are difficult to reuse between different systems, and it brings also a costly and complex management. Furthermore, the integration problems create a barrier for data-driven clinical and business-related decisions at Karolinska. Hence the need for a consolidation project for MT-integration in order to make the management of Karolinska MT-data more cost effective and reliable as well as enable that the medical data is shared across the entire healthcare flow on a vendor-neutral way. In addition, Karolinska need to lower barriers to the introduction of new IT based consumers of MT-data.

T5 is a working name for a system that handles and stores physiological recordings from medical equipment (MT-data). The system includes primarily integration of hospital based medical systems and data transfer from these systems. Examples of these MT-systems include patient monitors, infusion pumps and ventilators. The collected data is made available to MT/IT based data consumers such as PDMS, Early Warning Score (EWS)-applications, quality registers and the like. T5 is thus the link between the different MT systems and their respective data consumers.

2. Assisted Living Technology and Applications Now and Future Foresight – Alleato Ab. Visit to Showroom Micasa

Assited living showroom Micasa

In the showroom apartment lives a fictional person called Hanna. The apartment is fitted to her needs and furnished like a real apartment with as home liking atmosphere as possible. Hanna has got a dementia diagnosis and she has recently moved to the flat. She needs caretaking through day and night and cannot anymore live at her old home. The apartment should be regarded as a part of group housing for dement persons. In the project work lot of weight has been put to help the care personnel to manage with their tasks. Technology has been installed in order to bring more safety, quality and integrity for the resident. With help from the technology can personnel avoid the unnecessary controls and time and travelling connected to those.

Assisted Living Technology - Alleato Ab

In the showroom apartment is installed a Trygg-i-hemmet system which integrates and controls functions in order to create a safe and reliable living environment. The technology is a supplement to the basic personal care taking and thus gives more time to contact on higher level. The system is controlled by a palm top size pc. The personnel can see the situation at Hanna`s flat via web interface. Different alarms and messages are received using mobile phones. All integrated functions and controls are adjusted to serve Hanna`s personal needs and preferences

3. Assessment of patietns for Assisted Living: @Home Unit, Rehabilitation Department, Danderyd Hospital

Training apartment @home offers training in everyday life

In training the apartment @home, patients with cognitive impairments after acquired brain to try their own homes before they are printed. Meaning of @home is that the patient should learn more about their own resources and difficulties in everyday life, and to identify what support the patient needs after discharge. In @home also robot giraffe, which means that the patient can receive guidance and supervision at distance.

In @home are various memory aids to remind the patient that do different things, like taking his medicine, turn off the stove, turn off the water tap or patio door, or turn off the TV. There are also alarm systems that are linked to the department so that hospital staff can quickly be on site if the patient needs help for any reason.

With the help of the robot giraffe can staff such as helping the patient to find his glasses or verify that the patient has taken their medication. If the patient becomes acutely ill, you can check that he or she will quickly get the right help. The giraffe has a display face, a camera, speakers and microphone and rolls produced with the help of motorized wheels. The remotely controlled from the ward using a conventional mouse through the Internet.

Cognitive disabilities

Cognitive impairment in acquired brain injury means that the patient has received a reduced ability of certain psychological functions. It may be that the patient easily forgets things or no longer bothered to take the initiative. Acquired brain injuries are injuries that begins acute and, for example, occurred in connection with an accident or by disease, such as stroke.

See the film about robot giraffe:
http://www.ds.se/Om-oss/Organisation/Rehabiliteringsmedicin/Traningslagenheten-home-ger-ovning-i-vardagslivet/

Sessio 4: Yhdistyykö vai eikö yhdisty?

Puheenjohtaja / Chair Elina Kontio

Perjantai 15.4.2016

Friday 15th of April 2016

14:00 – 14:40

4-1 **Apottin yhteensopivuusvaatimukset**
Antti Iivanainen, Toiminnan kehitysjohtaja
Oy Apotti Ab

4-2 **UNA –hanke, tuleva SOTE-tietojärjestelmä kumppanina**
Ari Pätsi, Tietohallintojohtaja
Etelä-Pohjanmaan sairaanhoitopiiri

4-3 **ODA –hanke, omahoidon digitaaliset arvopalvelut**
Hanna Nordlund, Projektipäällikkö
Espoon kaupunki

4-4 **Yritysnäkökulma, tuoteintegraatio**
Tapani Jokinen, Toimitusjohtaja
Medixine Oy

4-5 **Kansallinen näkökulma**
Anna Kärkkäinen, kehittämispäällikkö
Terveyden ja hyvinvoinninlaitos

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Apottin yhteensopivuusvaatimukset
Antti Iivanainen, Toiminnan kehitysjohtaja
Oy Apotti Ab

Biografia Antti Iivanainen

Antti Iivanainen, Toiminnan kehitysjohtaja, Oy Apotti Ab, LT, Yleislääketieteen erikoislääkäri. Ennen Apotti-hanketta toimin yhtenä neljästä Helsingin sosiaaliviraston ja terveyskeskuksen yhdistymisen suunnittelijoista. Siihen tehtävään minut nimitettiin Helsingin terveyskeskuksen terveysasemat osaston osastopäällikön tehtävästä, jossa johdin Helsingin kaupungin terveysasemaverkkoa sekä koulu- ja opiskeluterveydenhuoltoa ja neuvolatoimintaa. Edeltävästi toimin sekä Laajasalon että Herttoniemen terveysasemien ylilääkärinä. Terveyskeskuskuslääkärin työn kokemusta on n. 20 vuoden ajalta.

Biography Antti Iivanainen

Antti Iivanainen, Apotti Limited, Development director, M.D., D.Med.Sc. Specialist in General Practice. Previously to the appointment in Apotti –Program I worked as one of the four planners in the unification of the Social welfare department and Health care department of City of Helsinki. Before that I was the director of Health stations in Helsinki Health care department which consists of a network of health stations, school and student health care and well-baby and maternity clinics. Before that I work as a chief phycisian at Laajasalo and Herttoniemi health stations. I have about 20 years experience of working as a GP.

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UNA –hanke, tuleva SOTE-tietojärjestelmä kumppanina
Ari Pätsi, Tietohallintojohtaja
Etelä-Pohjanmaan sairaanhoitopiiri

Biografia Ari Pätsi
Ari Pätsi (s.1961), asuu ja työskentelee tällä hetkellä Etelä-Pohjanmaalla, Seinäjoella. Hän on koulutukseltaan Diolomi-insinööri. Ari Pätsi toimii Etelä-Pohjanmaan sairaanhoitopiirin tietohallintojohtajana. Terveydenhuollon tietojärjestelmäympäristössä hän on työskennellyt jo lähes 15 vuotta johtamisen tehtävissä. Sitä ennen hän toimi tieto- ja tietoliikennetekniikan opettajana Pohjois-Pohjanmaalla.
Ari Pätsi on toiminut terveydenhuollon tietohallinnon ja siihen liittyvien prosessien kehittämistehtävissä niin alueellisesti kuin kansallisestikin. Tällä hetkellä hän vastaa organisaationsa edustajana kasallisen UNA-hankkeen toteutuksen onnistumisesta hanketoimiston isäntäorganisaation puolesta sekä Hanko- projektin johtoryhmän puheenjohtajana.

UNA hankkeen Muodostaa 18 sairaanhoitopiiriä ja 7 isoa kaupunkia. Ko. alueella asuu noin 3,6 miljoonaa henkilöä. Yli 200 sosiaali--ja terveydenhuollon sekä ICT- ammattilaista osallistuvista organisaatioista on antanut panoksensa hankkeeseen.

UNA-projekti tavoitteet:
- Tavoitteena on tuottaa organisaatio- ja toimittajariippumaton vaatimusmäärittely asiakaslähtöisten ja vaikuttavien hyvinvointipalveluiden tuottamisessa edellytettävästä yhteen toimivasta modulaarisesta sote-tietojärjestelmäkokonaisuudesta. Näkökulmana on "hyvinvoinnin tietojärjestelmä", jossa asiakkaalla ja potilaalla on vastuullinen ja "ohjauksellinen" rooli
- Tavoitteena on myös tarjota laadukkaita palveluja kansalaisille ja potilaille ilman organisaatiorajoja
- Tavoitteiden saavuttaminen tarkoittaa, että muodostetaan yhteinen näkökulman niin terveydenhuollon ja sosiaalihuollon järjestelmistä kuin eri digitaalisista terveysratkaisuista ja luoda aidosti integroitu modulaarinen hyvinvointijärjestelmäkokonaisuus.
- Sosiaali- ja terveydenhuollon prosessien uudelleen määrittelyllä on tärkeä rooli, koska sosiaali- ja terveydenhuollon palvelut pitäisi muuttaa vastaamaan edellä mainittujen tavoitteita
- Perustuen näihin tavoitteisiin olisi voitava määritellä tai hankkia sosiaali- ja terveydenhuollon tietojärjestelmäratkaisut moduuleina useammalta eri toimittajalta. Tässä yhteydessä on tehty yhteistyötä kansallisten ja alueellisten viranomaisten ja virkamiesten kanssa. Sosiaali- ja terveyspalvelujen uudistamishanke (Sote) antaa suuntaviivat uudenlaisille palveluille.

Hanke on asettanut keskeiset arkkitehtoniset ja muut linjaukset tulevaisuuden hyvinvoinnin tietojärjestelmäkokonaisuudelle
- Tiedot on tallennettu ytimeen, joka ottaa vastaan ja antaa tietoa ulos rajapintakerroksen kautta
- Ydin huolehtii tiedon eheydestä ja tarjoaa rajapintakerroksen kautta käyttöliittymilleen mahdollisuuden hakea tietoa ja tallentaa tietoa
- Modulaarisuus määräytyy toiminnallisiin kokonaisuuksiin pohjautuen
- Tiedon ja integraatiorajapintojen omistajuus on asiakkaalla/tilaajalla
- Avoimella arkkitehtuurilla mahdollistetaan avoin, laaja kehittäjäyhteistyö
- Selkeästi eroteltavilla moduuleilla vähennetään riippuvuuksia ja helpotetaan ylläpidettävyyttä ja muunneltavuutta
- Ydin sisältää keskeisimmät ominaisuudet ja kattavat rajapinnat. Tämä mahdollistaa enemmän mahdollisuuksia lisätä uusia toimintoja ja ominaisuuksia
- Tietojärjestelmätoiminnot ja prosessit on suunniteltu toimimaan itsenäisesti, avoimesti ja joustavasti (= moduulit)

Tulokset on koottu eri menetelmillä, mm. määritellyt, hoitoketjukuvaukset, käyttäjätapaukset, ratkaisujen toiminnalliset vaatimukset, tietosuojan ja turvallisuuden vaatimukset, tekninen arkkitehtuuri vaatimukset jne. Projekti päättyy 15 päivänä toukokuuta 2016. Hankinta ei sisälly tähän projektiin. Hanko-projektin hankesuunnitelmassa on periaatteet organisaatioille seuraavia vaiheita varten. Tämän jälkeen olisi organisaatioiden voitava päättää, miten ne jatkossa etenevät

The UNA Project
Ari Pätsi, Chief Information Officer
South Ostrobothnia Hospital District

Biography Ari Pätsi
Ari Pätsi (born 1961), is living and working in South Ostrobothnia, Seinäjoki. He is a trained Master of Science. He is working in South Ostrobothnia Hospital District as a Chief Information Officer (CIO). In Healthcare information system environment, he has worked almost 15 years in management positions. Before that he worked as a teacher of data processing in Northern Ostrobothnia. Ari Pätsi has worked in development of health information management processes, both regionally and nationally. Currently he works as a representative of his organization in a national Una project, which the host organization is the South Ostrobothnia

The UNA project is owned by 18 hospital districts and 7 big cities in Finland with approximately 3,6 million inhabitants in those areas. More than 200 social-and healthcare professionals as well as ICT-professionals from organizations involved contribute their time and effort to the project.

Priorities for the UNA-project
Priority is to produce requirements and demands for a modular health and social information system. In our perspective is " a Welfare information system", where a customer and patient has a responsible and "steering" role

Aim is also to provide high-quality services for citizens and patients without organizational boundaries
- Meeting those goals means bringing together all aspects of the health care and social welfare systems - care delivery, physicians and digital health solutions to create a truly integrated modular welfare system.
- Redefining social and health care has an important role, because ways of delivering health and social care should be changed towards aims above.
- Based on these demands organizations should be able to define or obtain their health and social information solutions in stages and in modules from various number of vendors. This work is made in co-operation with national and regional officers. Implementation of a reform of social welfare and health care services gives guidelines for a new kind of services.

The project has set key architectural and other guidelines for the welfare information system of the future.
- Data is stored in core which receives and gives out information via an interface layer
- The core is responsible for data integrity and provides via the interface layer ability to the user interface to search and record information
- Modularity is based on the functional entities
- Data integration and interfaces belong to the customer / subscriber
- The open architecture allows an open, wide-ranging co-development
- A clear distinction between different modules diminishes dependencies and facilitates the maintainability and adaptability
- The core contains the core features and comprehensive interfaces. This enables more possibilities for adding new functions and features
- Functions of the information systems and processes are designed to work independently, transparently and more flexible (= modules)

Results, collected by different methods, include definitions, care pathways, user cases, functional requirements for solutions, requirements for data protection and security, requirements for technical architecture etc. The project will end on 15 May 2016. Procurement is not included in this project. The Hanko project plans principles for the next steps for the organizations. After that the organizations should be able to determine how they proceed in the future.
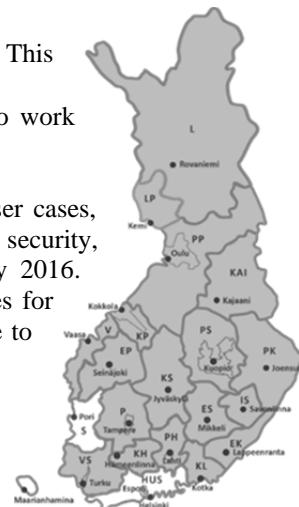
ODA –hanke, omahoidon digitaaliset arvopalvelut
Hanna Nordlund, Projektipäällikkö
Espoon kaupunki

Biografia Hanna Nordlund
Hanna Nordlund toimii Espoon kaupungilla kansallisen Omahoito ja digitaaliset arvopalvelut (ODA) projektin projektijohtajana. Hanna Nordlund on koulutukseltaan kauppatieteiden tohtori. Hänellä on 15 vuoden kokemus erilaisista tutkimus- ja kehitystehtävistä sekä projektien ja projektisalkun johtamisesta. Hän on työskennellyt sekä julkisen että yksityisen sektorin organisaatioiden kanssa eri toimialoilla.

Omahoito ja digitaaliset arvopalvelut (ODA) -projektissa uudistetaan sosiaali- ja terveyspalvelujen toimintamalleja Suomessa sekä rakennetaan kansallinen itse- ja omahoitoa tukeva sähköinen palvelukokonaisuus. Projekti kuuluu hallitusohjelman kärkihankkeisiin.

ODA–palvelussa hyvinvoinnistaan kiinnostunut tai huolestunut kansalainen voi tehdä tieteelliseen näyttöön perustuvan hyvinvointitarkastuksen, joka arvioi hänen terveyteensä ja hyvinvointiinsa liittyviä riskejä. Palvelu antaa ehdotuksia muutoksista, joiden avulla kansalainen voi parantaa omaa terveyttään ja hyvinvointiaan omatoimisesti. Muutosten tueksi hän voi asettaa itselleen tavoitteita ja ottaa käyttöön sähköisiä hyvinvointivalmennuksia, jotka ohjaavat ja antavat palautetta. Jos hyvinvointitarkastuksen tulos näyttää huolestuttavalta, ohjaa palvelu ottamaan yhteyttä ammattilaiseen.

Yksittäisestä terveyteen liittyvästä ongelmasta kärsivä kansalainen voi tehdä oirearvion tai hyvinvoinnin arvion ja saada omaan kuvaukseensa sekä taustatietoihinsa perustuvan toimintasuosituksen. Lisäksi palvelu ohjaa tarkoituksenmukaiseen oikea-aikaiseen palveluun, joka voi olla esimerkiksi itsehoito-ohje, sähköinen resepti, lähete tarkempiin tutkimuksiin tai ajanvarausoikeus sähköiseen järjestelmään. Hyvinvoinnin arvion avulla kansalainen voi puolestaan arvioida omaa tai läheisensä oikeutta saada tiettyjä palveluja.

Henkilökohtainen hyvinvointisuunnitelma kokoaa yhteen pitkäaikaissairaan tai useista hyvinvointiin liittyvistä ongelmista kärsivän asiakkaan hoidon/ palvelun tavoitteet, keinot ja seurannan. Tämä suunnitelma perustuu asiakkaan itse asettamiin tavoitteisiin ja ammattilaisen kanssa yhdessä suunniteltuun hoitoon tai palveluun, jonka seurannassa asiakkaalla itsellään on aktiivinen rooli. Asiakkaan kanssa sovitaan seurattavista asioista sekä rajoista, joiden puitteissa mitattavien asioiden tulisi pysyä. Tarvittaessa järjestelmä antaa hälytyksen sekä asiakkaalle että ammattilaiselle. Näin hoidon tai palvelun seurantavälit voidaan räätälöidä asiakkaan tilanteen mukaan.

Palvelut hyödyntävät sekä ammattilaisten järjestelmissä olevaa tietoa että kansalaisten ja asiakkaiden henkilökohtaista hyvinvointitietoa. Näin palvelujen antamat suositukset ovat aina henkilökohtaisia. ODA-palvelukokonaisuus nojaa kansalliseen palveluarkkitehtuuriin.

Uusilla palveluilla halutaan parantaa palvelujen saatavuutta, laatua, tuottavuutta ja asiakastyytyväisyyttä. Palvelut ovat asiakkaiden käytössä ajasta ja paikasta riippumatta. Nykyisin ammattilaisten takana oleva tieto tuodaan palvelujen kautta asiakkaiden saataville ja heille annetaan enemmän vastuuta oman tilanteensa analysoinnista ja seurannasta.

Ammattilaisten näkökulmasta uudet omahoitopalvelut poistavat paljon rutiinityötä, kun taustatietoa asiakkaasta saadaan ennen kontaktia ja asiakkaan itsensä kirjaamana. Tiedot siirtyvät ammattilaisten järjestelmiin ja ammattilainen voi vastaanotolla keskittyä vuorovaikutukseen. Uudet palvelut vapauttavat myös työntekijän työtä ajasta ja paikasta riippumattomaksi. Asiakkaan ja ammattilaisen välinen suhde on vahvassa muutoksessa kohti tasavertaisten asiantuntijoiden yhteistyötä.

Laajassa käytössä yllä kuvatulla palvelukokonaisuudella voidaan saavuttaa merkittäviä kustannushyötyjä, koko Suomen tasolla noin 100 miljoonaa euroa vuodessa. Samoilla resursseilla voidaankin tulevaisuudessa palvella suurempaa asiakasmäärää. Digitalisoinnin myötä prosessit yhdenmukaistuvat ja palvelut tasalaatuistuvat. Samaan aikaan on mahdollisuus saada tietoa väestön hyvinvoinnin tilasta ja ohjata sitä kautta palvelutuotantoa ja seurata palvelujen vaikuttavuutta.

Projektissa on mukana 14 kuntaa ja sairaanhoitopiiriä. Valmistuessaan vuonna 2018 palvelukokonaisuus on kaikkien kuntien ja sairaanhoitopiirien hyödynnettävissä.

Self-care and digital value services (ODA)
Hanna Nordlund, Project Manager
City of Espoo

Self-care and digital value services (ODA) aims at renewing healthcare and social services in Finland and builds a national e-service to support self-care and assisted self-care. The project is a part of Finnish Government program.

A person interested in or worried about his health is offered an evidence-based wellbeing check service which analyses the person's health- and functionality-related risks, gives suggestions of changes or actions that would benefit him. The person can then set goals for himself and choose from different e-coaching programs. If the risks are concerning the service advices the person to contact a professional.

A person suffering from a single health-related symptom is offered a smart symptom checker. The service gives a recommendation and automatically guides the person into an appropriate service that may be self-care instructions, e-prescription, referral to further examinations (e.g. blood sample) or contact to a professional. Smart wellbeing checker operates with a similar logic and gives a possibility to evaluate a person's right to social services.

A personal health, wellbeing and care plan gathers together the objectives, means and measures and follow-up of treatment/ service of a person with a chronic disease or multiple wellbeing related- problems. The customer and the professionals involved in his process agree on the limits within which certain observations (e.g. blood sugar) should stay. The service remarks both the customer and the professional if needed. This way the follow-up of treatment or service can be customized individually.

These services use both the data from professionals' systems as well as PHR thus making the analyses and recommendations individual. They lean on the national service architecture.

The aim of these services is to improve the availability, quality, productivity and customer satisfaction. Healthcare and social services as well as reliable evidence-based guidance are available to people independent of time and place. People can be given more responsibility for analyzing and following their own health and wellbeing.

From the viewpoint of professionals these services remove a lot of routine work when customers are able to do many tasks themselves. Additionally, professionals get much more information about the customers beforehand which improves the quality of contacts. These services make the work of professionals partly independent of time and place and make possible new, more flexible ways of working. The relationship between professionals and customers is changing significantly towards collaboration between two equals.

This entity of services described above enables us to take care of more customers with the same resources thus responding to the increasing demand-pressure in public healthcare and social services. Along with digitalization the operational processes become more unified and the quality of services more homogenous. Also, information about the wellbeing of people and impact of care is available and this way organization can plan the production more accurately.

ODA is a joint project of 14 municipalities and hospital districts. In 2018 the system is ready available for implementation for all municipalities and hospital districts.

Yritysnäkökulma, tuoteintegraatio
Tapani Jokinen, Toimitusjohtaja
Medixine Oy

Biografia Tapio Jokinen
Tapio Jokinen on koulutukseltaan erikoislääkäri ja toiminut terveydenhuollon IT:n alalla 1980-luvun lopulta. Vuodesta 2000 hän on toiminut perustamansa Medixine Oy:n toimitusjohtajana ja osallistunut terveydenhuollon sähköisen asioinnin kehittämiseen sekä Suomessa että muualla Euroopassa ja USA:ssa.

Kansallinen näkökulma
Anna Kärkkäinen, Kehittämispäällikkö
Terveyden ja hyvinvoinninlaitos

Biografia Anna Kärkkäinen
- kehittämispäällikkö ja sosiaali- ja terveydenhuollon tiedonhallinnan IT-arkkitehti THL:n Operatiivisen toiminnan ohjausyksikössä.
- Aiemmin toiminut mm. valtakunnallisen Potilastiedon arkiston käyttöönotto –projektin projektipäällikkönä, muissa sähköisten palveluiden ja sosiaali- ja terveydenhuollon kehittämistehtävissä sekä sosiaalipalveluissa sosiaalityöntekijänä
- Koulutus: filosofian maisteri (tietojenkäsittelytiede), yhteiskuntatieteiden maisteri sekä sosionomi (AMK)

Biography Anna Kärkkäinen
- development manager and IT architect of information management in social welfare and health care, at National Institute for Health and Welfare, Information Services, Unit of Operational Management (OPER)
- previously the project manager of the deployment of the national patient data archive, other project management duties in developing eServices as well as social services, and also social worker in social services
- Education: Master of Science (computing science) and Master of Social Science

Finnish Society of Telemedicine and eHealth
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Sessio 5: Mitä oikeasti tapahtuu?

Puheenjohtaja / Chair: Paula Lehto

Perjantai 15.4.2016

Friday 15th of April 2016

16:30 – 18:00

5-1   **Minun terveyteni, case Hämeenlinna**
Ilona Rönkkö, Palvelusuunnittelija
Hämeenlinnan kaupunki

5-2   **Mobiilikorjaus erikoissairaanhoidossa**
Juha Roni, Sairaanhoitaja
Turun yliopistollinen sairaala

5-3   **Kuvallinen etähoito**
Anna-Liisa Lyytinen, Pohjoisen palvelualueen johtaja
Helsingin kaupunki

Minun terveyteni, case Hämeenlinna
Ilona Rönkkö, Palvelusuunnittelija
Hämeenlinnan kaupunki

Biografia Ilona Rönkkö
Ilona Rönkkö on sairaanhoitaja ja terveystieteiden maisteri. Maisteriopinnot hän suoritti Itä-Suomen yliopistossa opiskellen sosiaali- ja terveydenhuollon tietohallintoa. Hän on tohtorikoulutettava Helsingin yliopistossa. Ilonalla on pitkä työkokemus terveydenhuollon eri sektoreilta. Nykyisin hän on töissä Hämeenlinnan kaupungin terveyspalveluissa. Hän on projektipäällikkönä hankkeessa, jossa kehitetään ja implementoidaan sähköistä minunterveyteni.fi – palvelukokonaisuutta.

Biography Ilona Rönkkö
Ilona Rönkkö is a Registered Nurse (RN) and a Master of Health Sciences (M.Sc.). She completed her master studies at the University of Eastern Finland, with Health and Human Services Informatics as her major. She is a Doctoral Student of the University of Helsinki. Ilona has a long working experience in various sectors of health care. Currently, she is working in the Health Services of Hämeenlinna City. She is working as a project manager in the project developing and implementing electronic Health Services called www.minunterveyteni.fi.

Hämeenlinnassa on tehty systemaattista kehittämistyötä perusterveydenhuollon ja erityisesti avosairaanhoidon palvelujen uudistamiseksi yli viiden vuoden ajan. Uudistamisen tarve syntyi havaituista ongelmista hoidon saatavuudessa, tuloksissa ja kustannuksissa. Kehittämisen teoreettisena viitekehyksenä on ollut erityisesti Terveyshyötymalli (Chronic Care Model), jonka kulmakiviin sisältyy asiakkaan roolin vahvistaminen aktiiviseksi toimijaksi sekä terveydenhuollon palveluvalikoiman kehittäminen asiakkaan omahoitoa tukevaksi. Perinteinen vastaanottokeskeinen palveluvalikoima ei enää riittänyt. Tarvittiin palveluja, jotka ovat asiakkaan käytettävissä silloin, kun hän niitä tarvitsee ajasta ja paikasta riippumatta. Tästä syystä Hämeenlinnassa sähköisten palvelujen kehittäminen nähtiin strategisesti tärkeänä osana avosairaanhoidon kokonaisuudistusta.

Sähköisten terveyspalvelujen kehittämiseksi käynnistettiin Sitran tuella Päätöksentuki asiakkaalle –hanke, jonka tavoitteena oli asiakkaan oma- ja itsehoidon mahdollisuuksien lisääntyminen, hoitotuloksien paraneminen, terveydenhuollon resurssihukan pieneneminen sekä terveydenpalveluiden saatavuuden paraneminen. Asiakkaan päätöksentukeen perustuva palvelukokonaisuus rakennettiin siten, että asiakas pystyy sähköisesti tallentamaan omia terveystietojaan, tekemään sähköisen terveystarkastuksen, arvioimaan omaa hoidon tarvettaan sekä saamaan yksilölliseen tarpeeseen kohdennettua valmennusta. Hankkeen tuloksena avattiin maaliskuussa 2015 minunterveyteni.fi -palvelukokonaisuus kuntalaisten ja terveysasemien asiakkaiden käyttöön.

Palvelukokonaisuuden ainutlaatuisuus on siinä, että se pystyy yhdistämään asiakkaan itse terveystililleen (Taltioni) tallentamiaan terveystietoja sekä potilastietojärjestelmään kirjattuja tietoja, viemään nämä tiedot yhdessä päätöksentuen moottoriin (Duodecimin EBMeDS) ja palauttamaan siellä lääketieteellisellä tietämyksellä rikastetun tiedon asiakkaan käytettäväksi minunterveyteni.fi -palvelussa (kuva alla).
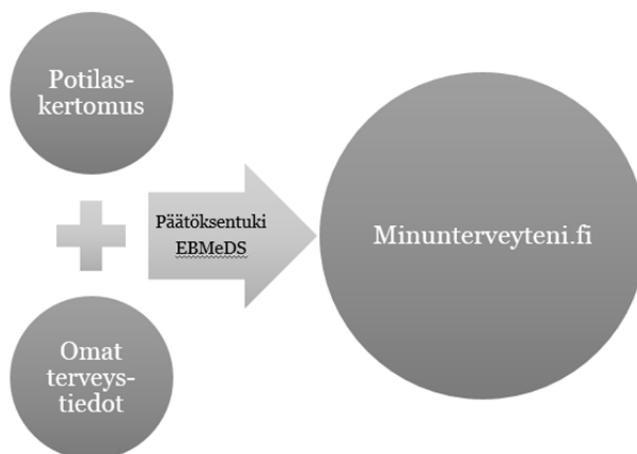
Asiakas voi käyttää minunterveyteni.fi -palvelua täysin itsenäisesti, mutta halutessaan hän voi kytkeä sen osaksi terveysasemalta saamaansa palvelua. Tämä voi tapahtua esimerkiksi siten, että asiakas lähettää oirearviointinsa terveysasemalleen hoidon suunnittelua varten.

Suurin osa palvelun käyttäjistä käyttää palvelua itsenäisesti. Noin neljännesosa käyttäjistä kytkee minunterveyteni.fi -palvelun osaksi terveysasemalta saamaansa palvelua (oirearvioinnin tai terveystarkastuksen tuloksen lähettäminen terveysasemalle). Alkuvaiheessa käyttäjiltä on saatu hyvää palautetta palvelun ketteryydestä esimerkiksi silloin, kun hoito on järjestynyt sujuvasti asiakkaan lähettämän oirearvion jälkeen. Eniten kehittämisehdotuksia on tehty käytettävyyden parantamiseksi esimerkiksi palvelujen kertakirjatumista tukemaan. Aiemmat kokemukset uuden palvelun implementoinnista ovat osoittaneet, että uuden palvelun käytön yleistyminen vie oman aikansa.

Palvelukokonaisuutta kehitettiin yhteistyössä asiakasfoorumin kanssa, jolloin asiakastarpeet ja -toiveet voitiin ottaa jo varhaisessa vaiheessa huomioon. Myös terveydenhuollon ammattilaiset ovat olleet mukana kehittämistyössä, jolloin sen välttämätön integrointi toiminnallisen muutokseen onnistuu paremmin. Sähköisten palvelujen käyttöönottoa tuetaan keskittämällä toimintaa keväällä perustetun virtuaaliyksikön henkilöstölle.

Keväällä 2016 on tarkoitus esitellä myös uudet minuterveyteni.fi -kokonaisuuden ominaisuudet ja sisällöt: mm. käytettävyyden parantaminen kertakirjautumisten avulla sekä asiakkaiden etämittausprosessien kytkeminen palveluun. Markkinointia ja viestintää on tarkoitus tehostaa hyödyntäen monipuolisesti eri viestintäkanavia. Jatkossa Hämeenlinna osallistuu Omahoito ja digitaaliset arvopalvelut –hankkeeseen, jossa palvelukokonaisuus ulotetaan laajemmalle (myös sosiaalipuolelle) ja sisältöä kehitetään sekä lisätään.

Mobiilikirjaus erikoissairaanhoidossa
Juha Roni, Sairaanhoitaja
Turun yliopistollinen sairaala

Biography Juha Roni
Roni työskentelee Akuuttisisätautiosasto 1 sairaanhoitajana Turun yliopistollisessa keskussairaalassa (Tyks), joka kuuluu Varsinais-Suomen sairaanhoitopiiriin.

Biography Juha Roni
Roni works as a nurse in the Acute Internal Medicine Ward 1 in Turku University Hospital (Tyks) which is part of The Hospital of Southwest Finland.

Vuonna 2011 Turun yliopistollisessa keskussairaalassa (Tyks) otettiin ensimmäisen kerran mobiilikirjausjärjestelmä käyttöön yhdellä osastolla. Mobiilikirjauksen käyttöä laajennettiin vuonna 2015, jolloin järjestelmän käyttö pilotoitiin kahdella osastolla.

Hoitajat kirjaavat päivittäin paljon tietoa potilaasta sähköiseen potilaskertomukseen. Turun yliopistollinen keskussairaala halusi vähentää hoitajien kirjaamiseen kuluvaa aikaa sekä poistaa kirjauksissa tapahtuvia virheitä. Mobiilikirjauksen avulla voitiin nopeuttaa tietojen kirjaamista ja niiden näkymistä potilastietojärjestelmässä kaikille potilasta hoitaville. Aiheesta tehtiin opinnäytetyö, jonka perusteella voitiin varmentaa mobiilikirjaamisen tarpeellisuutta. Lähtötilanteen esiselvityksessä todettiin, että mobiilikirjausjärjestelmälle oli tarvetta. Ennen mobiilikirjausjärjestelmää esimerkiksi potilaiden vitaalielintoimintojen mitattujen suureiden kirjaaminen tapahtui pääosin siten, että hoitaja kirjoitti mitatun arvon muistilapulleen ja siirsi sen sähköiseen potilastietojärjestelmään, kun seuraavaksi meni tietokoneelleen. Kirjaamiseen liittyi pitkiä viiveitä, koska mittaus saattoi tapahtua aamulla ja kirjaus vasta iltapäivällä. Jari Loukasmäen Mobiilikirjaus Turun yliopistollisessa keskussairaalassa –opinnäytetyössä todettiin, että tutkituilla osastoilla tehtiin paljon mittauksia potilaille ja mobiililla ratkaisulla voitaisiin lyhentää mittaustulosten tallennusviivettä ja tuplakirjausten poistuminen vähentäisi kirjausvirheiden mahdollisuutta.

Mobiilikirjaamisen sovelluksen Tyksiin toimitti Medanets Oy. Sovellusta muokattiin osastojen tarpeiden mukaiseksi. Käyttöön otettiin langaton kirjaaminen sekä lisäksi toisella osastolla myös automaattinen kirjaaminen. Langattoman kirjaamisen avulla potilaan mittaustulokset ja muut merkinnät tallennetaan potilastietojärjestelmään mobiililaitteella suoraan potilaan luota langattomasti, jolloin ne ovat heti selattavissa sekä mobiililaitteella että potilastietojärjestelmässä. Automaattisella kirjaamisella voidaan lisäksi siirtää potilasmonitorien arvoja Philipsin keskusvalvontajärjestelmän kautta suoraan potilastietojärjestelmään mobiililaitteen avulla. Mobiililaitteisiin kirjaudutaan joko henkilökohtaisella VRK-kortilla tai syöttämällä oma käyttäjätunnus ja salasana. Potilas tunnistetaan potilasrannekkeen viivakoodista tai mobiililaitteen potilaslistasta, jonka jälkeen päästään kirjaamaan arvoja sekä selaamaan potilaasta kirjattuja arvoja reaaliaikaisesti.

Projektin aikana osastoilta kerättiin hoitajilta käyttökokemuksia ja kehittämisideoita järjestelmästä. Päivässä tehtiin keskimäärin 250 mobiilikirjausta. Mobiililaitteena käytettiin älypuhelinta ja se koettiin hyväksi. Mobiilikirjaamisen käytön opettelu koettiin helpoksi. Mobiilikirjausjärjestelmä helpotti kirjausrutiineja ja vähensi hoitajien kirjaamiseen käytettyä aikaa. Lisäksi sähköisen potilaskertomuksen tietojen ajantasaisuus helpotti lääkärien työskentelyä ja tiedon saantia.

Tulevaisuudessa mobiilikirjaus otetaan käyttöön Tyksissä yli 20 osastolla ja mobiilikirjauksen käyttöä laajennetaan koko Varsinais-Suomen sairaanhoitopiirissä.

Kuvallinen etähoito
Anna-Liisa Lyytinen, Pohjoisen palvelualueen johtaja
Helsingin kaupunki

Biografia Anna-Liisa Lyytinen
Sairaanhoitaja 1977, Erikoissairaanhoitaja 1980 (kirurginen sairaanhoito,syöpätautien sairaanhoito), THM 1988, Tampereen yliopisto, Johtamisen erikoisammattitutkinto 2005, eMBA 2010, Tampereen yliopisto
Työ: Vuodesta 1986 työssä Helsingin kaupungin tehtävissä ylihoitajana, johtavana ylihoitajana, tulosyksikön johtajana, vuodesta 2001 kotihoitokeskuksen johtajana, vuodesta 2005 kaupungin kotihoidon johtajana, vuodesta 2013 pohjoisen palvelualueen johtajana.

Biography Anna-Liisa Lyytinen
RN 1977, Specialized Nurse 1980 (Surgical Nursing, Oncology Nursing), M.Sc. 1988, University of Tampere, Specialist Qualification in Management 2005, eMBA 2010, University of Tampere
Career: Since 1986, the work done in the nearby city of Helsinki; head nurse leader, business unit director, since 2001, home care center director, since 2005, the city's director of home care, from 2013, the northern service district director

Helsingin kaupungin teknologia -avusteiset kotihoitopalvelut

Helsingin kaupungin kotihoidossa on ollut 2000-luvulla useita teknologian käyttöön ja ikääntyneiden palveluihin liittyviä hankkeita. Näyttö teknologian käytettävyydestä, vaikuttavuudesta ja kustannus-hyödyistä on karttunut vähitellen erilaisten kokeilujen myötä. Teknologia on vain yksi väline muiden joukossa, eikä sen avulla pystytä vastaamaan kaikkiin ikääntyneiden kotona asumisen ongelmiin. Teknologialla ei voida korvata ihmissuhteita, mutta sen avulla voidaan mahdollistaa ja tukea sosiaalista vuorovaikutusta, lisätä turvallisuutta ja avustaa kotihoidon toimintakokonaisuutta ja samalla suunnata kotihoidon henkilöstön läsnäoloa asiakkaiden tarpeiden mukaisesti.

Kokeiluissa on todettu, että usein tietotekniset laitteet ja sovellukset vaativat sellaista osaamista, johon muistisairas tai kognitiivisesti heikentynyt asiakas ei enää pysty. Ikääntyneiden läheisten, omaisten ja etenkin omaishoidon ja omaishoitajien verkostoitumisen tukemiseksi sopivia sovelluksia on saatava käyttöön.

Näitä haasteita on ratkottu pitkäjänteisellä kehittämistyöllä Helsingin kaupungin kotihoidon, Helsingin kaupungin Palvelukeskuksen hoivapalveluiden, Helsingin yliopiston, Aalto –yliopiston ja yritysten yhteistyönä. Kehitettyjä, testattuja ja käyttöönotettuja ratkaisuja ovat kuvallinen turvapuhelin ja siihen liittyvä Contact Centerin ja auttamistiimien 24/7 toiminta. Ns. virtuaalihoitopalvelu on nyt käytössä yli 300 asiakkaalla kuukausittain. Lisäksi kokeilussa ovat kuntoutustoiminta, missä kotihoidon asiakkaat osallistuvat kotoaan kuva- ja ääniyhteyden välityksellä palvelukeskuksen toiminnallisiin ryhmiin. Alkamassa on myös kokeilu kotihoidon lääkäreiden etäkäynneistä.

Session 6: eHealth Roadmap

Chair: Arto Holopainen

Friday 15th of April 2016

18:00 – 18:35

6-1 **Future Visions for eHealth**
Andy Fischer, President
International Society for Telemedsicine and eHealth

Future Visions for eHealth

Andy Fischer, President

International Society for Telemedsicine and eHealth

Biography Andy Fischer
Andy Fischer studied medicine before graduating in specialist studies in surgery and emergency medicine. In 1999 he founded Medgate which he has subsequently led as CEO and as a boear member. In addition, he is a board member for the Medgate Telemedicine Center, Abu Dhabi (United Arab Emirates), the Medgate Partner Network, and since 2014, the Merian Iselin Foundation and the University Children's Hospital Basel (UKBB). Furthermore, he was a physician in the Swiss emergency helicopter service Rega up to 2006.

Andy Fischer is a founding and executive member of the Swiss Society for Telemedicine and eHealth (SGTMeH) as well as President of the International Society for Telemedicine and eHealth (ISfTeH). He has lectured in Telemedicine at the University of Zurich since 2008. Furthermore, he is the current Vice President of the Alliance for the Liberal Healthcare Switzerland (Bŭndnis freiheitliches Gesundheitswesen Schweiz), founded in 2013.

The healthcare systems in industrialized nations are confronted with various changes. Demographic changes with the aging of the population, increasing mobility and changes in the purchasing behavior of our patients, increasing cost pressure and rapid consolidation of service providers and other stakeholders to form powerful market players. These and other factors represent a significant challenge. There are chances in this environment for new medical care instruments such as Telemedicine and eHealth.

POSTERS / POSTERIT

P-1 **The Finnish Nurses Association's eHealth Strategy**
Outi Ahonen[1], Pirkko Kouri[2]
[1]Laurea University of Applied Sciences, [2]Savonia University of Applied Sciences

P-2 **The Developers of Digital Health and Welfare Services**
Outi Ahonen[1], Gun-Britt Lejonqvist[2], Baiba Apkalna[3], Kersti Viitkar[4]
[1]Laurea University of Applied Sciences, [2]Arcada University of Applied Sciences, [3]Medical College of Riga Stradins University, [4]Tartu Health Care College

P-3 **WILLE project - Co-developing digital services for future hospital environments**
Mari Ervasti[1], Minna Pikkarainen[2], Salla Muuraiskangas[1], Jarmo Reponen[3], Timo Alalääkkölä[4]
[1]VTT Technical Research Centre of Finland Ltd, [2], Centre of Health and Technology (CHT) [3]Research Unit of Medical Imaging, Physics and Technology (MIPT), University of Oulu, [4]Oulu University Hospital

P-4 **Kieliteknologiasta tukea terveystiedon ymmärtämiseen**
Katri Haverinen, Milla Paulamäki, Petra Minn, Tuula Carpelan
Lingsoft Oy

P-5 **Arterial pulse waves measured with PPG sensors and comparison of the pulse waveform analysis in healthy cohort subjects and atherosclerosis patients**
M. Huotari[1], K. Määttä[1], J. Röning[1], P. Romsi[2]
[1]Faculty of Information Technology and Electrical Engineering, Oulu University, Oulu, Finland
[2]Oulu University Hospital, Oulu, Finland

P-6 **Nordic eHealth Benchmarking**
Hyppönen H[1], Andreassen H[2], Audur Hardardottir G[3], Brattheim B[4], Faxvaag A[4], Gilstad H[4], Jerlvall L[5], Kangas M[6], Nøhr C[7], Pehrsson T[5], Reponen J[6], Koch S[5], Villumsen S[7], Vimarlund V[5]
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[5] Swedish Society for Medical Informatics (SFMI) on behalf of all Swedish Network members
[6]Finntelemedicum, University of Oulu, Finland, [7]Department of Development and Planning, Aalborg University, Denmark

P-7 **Small-scale study of usability and feasibility of a mobile application to support independent exercise of patients with Parkinson's disease**
Milla Immonen[1,2], Heidi Similä[1,2], Niina S. Keränen[3,6], Maarit Kangas[3,6], Jaakko Tornberg[5], Heidi Enwald[4,6], Timo Jämsä[3,6], Raija Korpelainen[1,5,6]
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[4]Information and Communication Studies, Faculty of Humanities, University of Oulu
[5]Oulu Deaconess Institute, Department of Sports and Exercise Medicine
[6]Medical Research Center Oulu, Oulu University Hospital and University of Oulu

P-8 **OuluHealth Labs – an innovation platform for telemedicine and eHealth**
Noora Jansson[1], Jarmo Reponen[2]
[1]BusinessOulu, [2]FinnTelemedicum, University of Oulu

P-9   Kanta development project: Online school for Kanta services to support the work of social and health care professionals

Tarja Kalima
National Institute for Health and Welfare

P-10   Feasibility of home-based cognitive telerehabilitation- a pilot study

Niina S. Keränen[1,2], Heta Helakari[1], Jiri Lahti[3], Heidi Similä[4,5], Milla Immonen[4,5], Maarit Kangas[1,2], Heidi Enwald[6,2], Mauri Kallinen[3,4], Raija Korpelainen[4,7], Timo Jämsä[1]

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[6] *Information and Communication Studies, Faculty of Humanities, University of Oulu*
[7] *Oulu Deaconess Institute, Department of Sports and Exercise Medicine*

P-11   National and regional eHealth profiles of Finnish public healthcare in 2014

Riikka Niemelä[1], Maarit Kangas[1,2], Jarmo Reponen[1,2], Niina S. Keränen[1,2], Päivi Hämäläinen[3]

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P-12   Demonstration of user-driven prototyping of an open source and mobile EHR application for eye treatment purposes: case ASTE

Janne Pitkänen
Adusso Ltd. and Aalto University School of Science

P-13   Adaptable Telemedicine for Underserved Communities

Andrew Rebeiro-Hargrave[1], Ashir Ahmed[2], Hu Min[3], Islam Rafiqul[4]
[1]*Department of Industrial Engineering and Management, Aalto University, School of Sciences, Finland,*
[2]*Department of Advanced Information Technology, Kyushu University, Japan,*
[3]*Medical Information Center, Kyushu University Hospital, Kyushu University, Japan*
[4] *Grameen Communication Center, Grameen Organization, Bangladesh*

P-14   Implementation of wireless vital signs monitoring technologies from a hospital perspective

Marko Sallisalmi
Vaasa Central Hospital, Patient Monitoring Board, Vaasa, Finland

P-15   Kanta development project: Prescription Centre expands into National Medication List

Heikki Virkkunen
National Institute for Health and Welfare, Finland

P-16   Co-created Healthier Uusimaa

Anne Äyväri, Paula Lehto, Harri Haapaniemi
Laurea Unversity Applied Sciences

P-17   Integrating mobile support for Hospital Information Systems

Pasi Meriläinen
Northern Ostro-Bothnia Hospital District

Tieteellinen komitea / Scientific Committee
Kouri Pirkko, Lehto Paula, Reponen Jarmo

The Finnish Nurses Association's eHealth Strategy

Outi Ahonen[1], Pirkko Kouri[2]
[1]Laurea University of Applied Sciences, [2]Savonia University of Applied Sciences

Growing use of information and communication technology (ICT) demands have caused a need for nursing to strengthen the knowledge, skills and competences related to ICT in health (eHealth) and define its versatile roles. The Finnish Nurses Association (FNA) named a group of eHealth experts from various professional fields that are closely connected to nursing e.g. nursing practice, higher education, nursing research and administration. The main purpose was to describe nurses' contribution to the national strategy concerning eHealth development and implementation in health and social care. The group searched for answers, discussed strategic issues, wrote drafts, and sent texts for open commentary circles. The chosen themes of the eHealth strategies deal with the role of the client, nursing practice, ethical aspects education and eHealth competences, nursing leadership, knowledge management and research and development. In publishing on the web every theme has three goals and five actions to achieve the objectives of the theme in question. Strategy wants to give the citizen a more centered role in conducting his/her own process to better health with help of professionals when needed. Citizens are more and more involved in decision-making, sharing power and responsibility in their caring process. Nurses work closely with patients from hospital to home settings. This gives nurses a strong role in the multidisciplinary groups when innovating and developing citizen-centered new services.

Nurses' education in Finland is giving them good competence to take part in the development work. eHealth is the area where new services are developed each the time citizens and professionals need new skills, knowledge and competence to communicate, based on useful and trustful services. The security and ethical aspect are an important key element to e-Services.

FNA´s strategy wants to take part in the discussion. How can we all take full advantage of existing eHealth services and nurses will be developing e-Services nationally and internationally in multiprofessional groups? In EU´s single market, the main target and challenge to all EU countries is to create new possibilities in distributing eHealth services. Finnish nurses want to develop better health care services to all citizens in the EU.

The FNAs strategy pages https://sairaanhoitajat.fi/tyoryhma/ehealth/
The ICN:s eHealth pages http://www.icn.ch/what-we-do/ehealth/
The ISfTeH - International Society for Telemedicine & eHealth pages https://www.isfteh.org/about

The Developers of Digital Health and Welfare Services

Outi Ahonen[1], Gun-Britt Lejonqvist[2], Baiba Apkalna[3], Kersti Viitkar[4]
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The healthcare systems in Europe are facing new challenges such as ageing of the population, increased budgetary pressure and thereby there is a need for cost-efficient solutions. As the Digital Agenda for Europe states, challenges can be found in insufficient skills and motivation of the health care personnel to take part in the digital world.

The project "The Developer of Digital Health and Welfare Services" is a multi-cultural and multi-professional project that aims to create a new 30 ECTS curriculum giving future professionals in IT, economics, social- and health care current competencies to match the needs of developing improved eHealth and welfare services for citizens. The project is funded by Central Baltic. The partners are from Estonia, Latvia and Finland.

The project starts by evaluating the current curriculums to find the current knowledge about developing eHealth and welfare services. In the second phase the project creates the new 30 ECTS curriculum. The content of the new curriculum is based on measured competency and the latest multi-professional knowledge about the needs of the digital society and is built around three main themes of 5 ECTS each; the client, the environment and the development of digital activities.

The curriculum will be based on the Learning by Developing (LbD) pedagogical model. In the LbD model, the goal is to bring about real changes in the world and new ways to act. In the UAS´s projects means having knowledge in practice, of practice and for practice, and generating new innovations. The partners arrange a study unit piloting the curriculum. The students' eHealth related competency is measured at the beginning and after the pilot. The curriculum is built on an e-learning platform. The students in the pilot get competence and skills in designing and creating eHealth services in an international co-operation. The themes of the development projects are ageing citizens, cross-border workers, young people at risk of becoming excluded and people with chronic diseases.

The new curriculum promotes multi-professional studying with the LbD - model, which gives students excellent opportunities to learn in real working life projects - and innovate new services to eHealth and welfare services.

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WILLE project - Co-developing digital services for future hospital environments

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Satisfying patient needs fuels the healthcare transformation agenda and ultimately the design of improved, patient-centered care processes. The confluence of these factors has inspired forward-looking healthcare leaders to rethink traditional models of digital healthcare service delivery. A next generation digital hospital is a future hospital in which various advanced technologies, such as critical medical devices, intelligent information systems and digital communication tools, are fully integrated to improve staff productivity, hospital operations, patient safety, and the overall patient experience. Currently, there are several ongoing Future Hospital programmes at the different hospitals in Finland that aim to safeguard high-level healthcare especially from the perspectives of improved, patient-centred care processes [1,2]. These programmes have arisen from the need to create novel service concepts for future digital hospital environments that meet the patient and healthcare professional needs, improve hospital processes and provide added value to different stakeholders.

WILLE (Wireless Lab Environment for Business) is a research project which aims at building a "service co-creation platform" that helps startup companies and SMEs to build hospital services together with doctors, nurses, families and large industries (e.g. who offer the hospital system interfaces) using the testing facilities of Oulu University Hospital's OYS TestLab (in which new services and use cases can be demonstrated and evaluated in a simulated hospital environment together with genuine end-users). The co-creation platform is meant to provide new building blocks for OuluHealth Labs innovation environment. These are then utilized to create business growth opportunities for companies.

While the Oulu University Hospital provides the physical premises for the co-creation platform, other partners in the project provide technology enablers to provide a digital layer of components keeping the co-creation platform alive. For instance, CGI and Tieto offer interfaces to the hospital systems, Fujitsu integration support for the developed services, TeliaSonera solutions to support communication between end users and hospitals and Nokia technology to enable 5G test network in the future to test the developed services. Additionally, service co-creation platform will closely tie together the 1) end-users (children, parents, nurses, and doctors), 2) healthcare industry (start-ups and large industry players), 3) testing facilities, and 4) co-design methods in true co-development processes.

While developing the platform in the project, novel service ideas for the future hospital care processes are developed and tested in two specific use cases. The patients and professionals will generate the needs for the novel digital service concepts by participating in the project's co-design process through face-to-face workshops and online co-creation tools. The first pilot case will develop the care taking process and digital support for children's and their parents' preparation to and life after a surgery. The goal of the second pilot case is to build better and new type of real-time communication support for emergency situations in which the patient is taken to the hospital by ambulance. In these two pilot cases, Oulu5GInnovation competition (http://5gfwd.org/) will be used as a way to invite and select best start-up companies into the service co-creation.

WILLE project was launched in the beginning of 2016, and the 18-month project ends in May 2017. Tekes, the Finnish Funding Agency for Innovation provides funding to the project as part of the Innovative Cities (INKA) programme. Part of the funding comes from the companies (Nokia, TeliaSonera, Haltian and Istekki) and Central Finland Health Care District whereas some companies such as Tieto, Fujitsu, CGI offer building blocks as a part of the co-creation platform. Project partners include BusinessOulu, Centre for Health and Technology (CHT), Center for Ubiquitous Computing, Centre for Wireless Communications (CWC), Oulu Business School/Martti Ahtisaari Institute, Medical Imaging, Physics and Technology (MIPT) research consortium (all from University of Oulu), VTT Technical Research Centre of Finland Ltd, Oulu University Hospital and Central Finland Central Hospital.

[1] http://oulu.com/en/tulevaisuuden-sairaala-alkaa-hahmottua/ (last visited 18.2.2016)
[2] http://www.ksshp.fi/fi-FI/Sairaanhoitopiiri/Uusi_sairaala_hanke (in Finnish, last visited 18.2.2016)

Kieliteknologiasta tukea terveystiedon ymmärtämiseen
Katri Haverinen, Milla Paulamäki, Petra Minn, Tuula Carpelan
Lingsoft Oy

Sähköisten palveluiden yleistymisen myötä yhä useamman on mahdollista tarkastella omia potilasasiakirjojaan. Nämä terveydenhuollon ammattilaisen näkökulmasta selkeät ja tietorikkaat tekstit ovat kuitenkin usein potilaalle vaikeaselkoisia, ja termien selvittäminen on työlästä. Tämä puolestaan heikentää potilaan kykyä huolehtia omasta terveydestään ja osallistua terveyttään koskevaan päätöksentekoon. Samalla menetetään mahdollisuus potilaan voimaannuttamiseen ja julkisen terveydenhuollon kustannussäästöihin, joita terveydestään tietoiset ja itse vastuuta ottavat potilaat tuottaisivat. Epäselvyydet ja väärinkäsitykset aiheuttavat myös kustannuksia, koska potilas tarvitsee terveydenhuollon ammattilaisen apua ymmärtääkseen häntä koskevan tekstin. Pahimmillaan vaikeaselkoiset potilaskertomukset voivat jopa vaarantaa potilasturvallisuuden.

Tähän ongelmaan tarttuu yhteispohjoismainen pilottiprojekti *Bridging the Language Gap*, jossa kehitetään kieliteknologiamenetelmiä potilaan tueksi terveystiedon ymmärtämisessä. Vuoden mittaisessa sydänsairauksiin keskittyvässä pilottiprojektissa on kehitetty lukualusta, jonka avulla potilas voi tarkastella esimerkiksi potilaskertomustaan ja saada tukea siinä esiintyvien termien ymmärtämiseen. Kyseessä on selainpohjainen ohjelma, joka merkitsee sille annettuun potilaskertomustekstiin tunnistamansa termit. Termit tunnistetaan lukualustan sisältämän termistön perusteella kaikissa taivutusmuodoissaan, ja termitiedon lähteinä käytetään tunnettuja, luotettavia lähteitä. Käyttöliittymä on yksinkertainen: merkittyä termiä napsauttamalla on mahdollista saada lisätietoa termistä, eli tarkastella esimerkiksi sen määritelmiä ja synonyymejä.

Projektissa lukualustaa on pilottitestattu Varsinais-Suomen Sydänpiiri ry:n jäsenistä koostuvan vapaaehtoisen testiryhmän voimin. Osallistujien ikä vaihteli 52 ja 83 vuoden välillä, ja kolme neljännestä heistä oli naisia. Ryhmälle järjestettiin ensin lyhyt koulutus projektista ja lukualustasta, ja tässä yhteydessä osallistujat täyttivät esitietokyselyn. Käyttäjät saivat testata lukualustaa itsenäisesti omilla tietokoneillaan hieman yli kuukauden ajan, minkä jälkeen heille lähetettiin sähköpostitse loppukysely. Kyselyllä tiedusteltiin käyttäjien kokemuksia ja heidän palautettaan lukualustasta. Esitietokyselyyn saatiin kaksitoista vastausta ja loppukyselyyn seitsemän.

Lukualustasta saatu palaute oli erittäin positiivista: Kuusi seitsemästä vastaajasta piti lukualustaa itselleen melko hyödyllisenä tai erittäin hyödyllisenä. Kaikki vastaajat pitivät lukualustaa vähintään melko helppokäyttöisenä ja kolme jopa erittäin helppokäyttöisenä.

Sekä esitietokyselyssä että loppukyselyssä testikäyttäjiltä kysyttiin, mitä heidän mielestään potilaskertomuksissa esiintyville lääketieteellisille termeille tulisi tehdä: tulisiko ne poistaa tekstistä kokonaan, korvata yleiskielisillä sanoilla, korvata yleiskielisillä sanoilla ja täydentää selityksillä vai jättää termit sellaisenaan paikoilleen ja täydentää selityksillä. Esitietokyselyssä suosituin vaihtoehto oli termien korvaaminen yleiskielisillä sanoilla ja täydentäminen selityksillä. Loppukyselyssä suosituimmaksi vaihtoehdoksi nousi pilottiprojektia vastaava vaihtoehto: termien säilyttäminen ja täydentäminen selityksillä. Selvälle enemmistölle termien selitykset olivat mieluinen ominaisuus.

Lukualustalla on laajat jatkokehitysmahdollisuudet. Jatkossa sitä aiotaan kehittää ja räätälöidä kattamaan myös muiden erikoisalojen kuin sydäntautien sanastoa ja optimoida se mobiilikäyttöön. Lisäksi lukualusta on mahdollista integroida olemassa oleviin palveluihin, kuten Omakanta-palveluun tai muihin potilaalle tarkoitettuihin portaaleihin. Tulevaisuudessa myös kansallisia terveysarkistoja, kuten Kanta-arkistoa, tulisi kehittää suuntaan, joka tukee potilaan omaa osallistumista: esimerkiksi käyttäjien profiilitietojen avulla laajemmista potilaskirjauksista automaattisesti tuotettavat, räätälöidyt versiot tarjoaisivat sekä potilaalle että ammattilaiselle entistä ymmärrettävämpää tietoa.

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Arterial pulse waves measured with PPG sensors and comparison of the pulse waveform analysis in healthy cohort subjects and atherosclerosis patients

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The purpose of this study is to show biosignals recorded by Photoplethysmographic (PPG) sensors for arterial elasticity estimation via pulse wave analysis obtained from left forefinger and left second toe. Several methods for measuring arterial elasticity have been developed. PPG pulse waves from the subjects were recorded from 18 persons (over 65 y) in supine position at blood vessel clinic (Figure). These measurements are absolutely patient-friendly, safe, and PPG measurement can be done smoothly on the skin of the patients. Decomposition analysis of the pulse waves produces five components: percussion wave, tidal wave, dicrotic wave, repercussion wave, and retidal wave. Also the second derivative of PPG pulse waveform envelopes produce the distinction of five sequential waves called the initial positive wave, the early negative wave, the late upsloping wave, the late downsloping wave, and the diastolic positive wave. These wave components can be used for further calculations. Pulse wave decomposition parameters are compared to find out information on person's arterial elasticity. Results show the elastic information in the form of pulse wave decomposition. The time scale information obtained could also be valuable in assessing the arterial elasticity index. This information is not obtainable from the electrocardiographic measurements. Carotid artery disease, eg., atherosclerosis is the main cause of circulatory diseases. Its early quantitative assessment is essential for making a diagnosis. In addition, persons with other cardiovascular diseases (CVD) may have decreased arterial elasticity compared with those free of CVDs. Change of arterial elasticity is one of the early markers of accelerated arterial aging and can correlate with many coronary risk factors. In blood vessels, the endothelial function of the arteries can been measured by PPG sensors. For the measurement data we applied pulse wave decomposition, which reflects the elasticity of the aorta and also its peripheral arteries, but also autonomic neural function. In this study the different indexes were tested, such as, the pulse waveform decomposition, the second derivative method of PPG, and an integrated pulse wave intervals is used for monitoring the arterial condition. The vascular response in resistance arteries plays an important role in blood pressure and the indexes can be used to evaluate recovery of the atherosclerotic patients. In this study the correlation between premature vascular aging and atherosclerosis of eight atherosclerotic patients will be examined. The preliminary results showed that the patients recorded different index of vascular aging compared to the young healthy subjects.

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Nordic eHealth Benchmarking

Hyppönen H[1], Andreassen H[2], Audur Hardardottir G[3], Brattheim B[4], Faxvaag A[4], Gilstad H[4], Jerlvall L[5], Kangas M[6], Nøhr C[7], Pehrsson T[5], Reponen J[6], Koch S[5], Villumsen S[7], Vimarlund V[5]

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Introduction

The Nordic Council of Ministers (NCM) established an eHealth group in 2010 for knowledge transfer between the Nordic countries and Faroe Islands, Greenland and Åland, to strengthen the Nordic global leadership position in the eHealth area and to raise awareness of eHealth as an instrument for modernisation of the health care systems. In 2012, the eHealth group established a subgroup – The Nordic eHealth Research Network (NeRN) – to develop, test and access a common set of indicators for monitoring eHealth in the region to be used by policy makers and scientific communities in supporting development of Nordic Welfare. The National Institute for Health and Welfare (THL) was selected as a coordinator of the network [1].

Methods

In the first mandate period (2012-2013), a four-phase methodology was developed and tested for eHealth indicator definition: 1) Defining the context (key stakeholders and the relevant area or system), 2) Defining the goals for monitoring 3) Defining methods for indicator selection and categorisation, and 4) Defining the data, reporting results and feedback. eHealth policy analysis, existing national surveys, the OECD priorities and stakeholder priorities were compared to select relevant functionalities and goals to monitor. Indicators were grouped using existing frameworks from the literature. The practical indicator definition work was aligned with the OECD eHealth indicator development, which coincided with establishment of the NeRN group. The work was focused on Information Exchange (HIE) and Personal Health Record (PHR) and Patient Portal-related indicators. [1] In the second mandate period (2013-2015) the altogether 49 of common indicators were defined [2]. The current mandate period (2015-2017) focuses on long-term management of the benchmarking information as well as on defining common Nordic indicators for monitoring citizens' use and experiences of eHealth services.

Results

The national eHealth monitoring surveys, log and register data were used as sources for common Nordic eHealth indicators. Altogether 9 HIE and PHR-related indicators for health care structural (or input) performance were defined under eHealth availability and (technical and information) quality domains. HIE and PHR –related health care process performance indicators included intensity of HIE and PHR use (16 common indicators), user satisfaction (6 common indicators) and impacts on conformity to care guidelines (1 indicator). Of the 7 HIE and PHR-related health care output and outcome performance indicators, 6 measure respondent's view of HIE and PHR impact on health care outcomes. One register-based indicator was defined in the domain of (ePrescription-related) medication safety. [2]

Conclusions

The work represents the first systematic analysis and benchmarking of selected eHealth functionalities in the Nordic countries. Comprehensiveness and comparability of the monitoring data for the commonly defined variables, and shifting emphasis on benchmarking HIE and PHR impacts remain challenges for future work.

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Small-scale study of usability and feasibility of a mobile application to support independent exercise of patients with Parkinson's disease

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Background: Parkinson's disease (PD) is a progressive neurological disorder including variations of motor and non-motor symptoms. Disease is diagnosed based on the symptoms of rest tremor, bradykinesia, rigidity, and loss of postural reflexes [1]. Functional movement rehabilitation has been shown to be effective in improving the quality of life of PD patients [2]. PTMomentum [3] is an exercise application designed for tablet computers and smart phones for encouraging and reminding people to exercise independently according to a program designed by a professional therapist.

Aim: Assess the feasibility and usability of exercise software for independent exercising in between of intensive rehabilitation periods in a small-scale study. The actual intensive rehabilitation period was not studied.

Methods: Three patients, two male and one female, aged 59-64, participating PD rehabilitation program in Oulu Deaconess Institute were given a PTMomentum exercise app for testing during year 2015. The participants had been diagnosed with PD during 2011-2013. The provided rehabilitation included two intensive periods at the rehabilitation center in six months intervals. In the beginning of the first period, the participants filled in a background questionnaire including questions about their health, occupation, living circumstances and technology use, and at the end of the last period they filled a final questionnaire including Likert-questions about usability and feasibility of the software. One participant used the software during the two one week intensive periods at the rehabilitation center. Two participants had their own tablet computers, and were able to use the software during the intensive periods and in addition at home, in between of intensive rehabilitation periods. All users had used internet and computers, and all of them had an internet connection at home. The most common reason for using the internet was electronic services, all had used shopping and community services, and two participants also used the internet for entertainment and keeping connections to friends and relatives. Participants also use mobile phones and have used touch screens. All participants think that technology eases their daily activities as taking care of errands is easier. All participants perform physical exercises independently.

Results: One participant reported having used the software fairly regularly. One reported not remembering to use the application regularly. Two questions about helpfulness in maintaining wellness and reaching aims related to personal wellbeing received one neutral, one positive and one negative response. All of the participants were positive on the appearance of the user interface. One participant thought that the application should give feedback, while two others were neutral. All of the participants agreed or somewhat agreed to using the application later, after the study. Two of the participants somewhat agreed on believing to have exercised more due to the device and one was neutral. One participant believed that the application was beneficial for him, one was neutral and one didn't believe the app was beneficial for him. The participants gave the application overall ratings 6, 7 and 8 on the scale 4-10. All participants somewhat disagreed on the question about easiness of initialization of the application. Two were neutral and one somewhat disagreed on the ease of use.

Conclusions: The exercise application was successfully initialized into personal use of older PD rehabilitation patients, and according to users own estimate, two out of three participants exercised more due to the device. The usefulness and ease of use were rated neutral. The initialization phase was not easy. According to this pilot, the application seems to be feasible for supporting independent exercising, but needs usability modifications to receive better acceptance.

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OuluHealth Labs – an innovation platform for telemedicine and eHealth

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OuluHealth is one of the five innovation ecosystems of Oulu Innovation Alliance. The OuluHealth ecosystem comprises several stakeholders from academia, the public sector, and the private sector. The principal idea is to facilitate open collaboration and to accelerate innovation by bringing together various partners able to contribute to the needs of the health care sector (Jansson, Ahokangas, Iivari, Perälä-Heape and Salo, 2014). The ecosystem approach enables the combination of expertise from wireless information technologies and life science to introduce smart ICT solutions for delivering advanced, personalized, connected health service solutions.

In physical terms, OuluHealth is located in Kontinkangas, a health campus close to the center of the Oulu city. The OuluHealth campus has developed around the Oulu University Hospital, opened in the 1970s, and is quite unique in the way that it compactly combines both public and private actors in the health care sector, ranging from Biocenter Oulu to a wide spectrum of small and medium-sized businesses. OuluHealth ecosystem strives to be a forerunner in creating innovative solutions to global challenges in the health care sector, aiming for the efficient return of investments and, most importantly, for the creation of jobs and health. One key offering of the ecosystem is OuluHealth Labs, perfect innovation platform also for telemedicine and eHealth, introduced next.

OuluHealth Labs provides companies and innovators with an integrated health test and development environment, including feedback from professionals. OuluHealth Lab services cover three test environments, which may be used separately or in combination, depending on the particular test case: OYS TestLab, Oamk SimLab and Oulu CityLab. This unique combination covers the whole patient care chain from home to hospital.

OYS TestLab, operated by Oulu University Hospital (OYS), is a brand new test environment for specialized health care products and services. In close collaboration with the industry, OYS also uses the laboratory to develop its processes and to model and simulate building projects for the Future Hospital program. The laboratory covers 300 square meters over two floors. Various hospital units can be built into open spaces: an operating theatre, clinics, wards, control rooms, waiting areas etc. OYS TestLab has a 3D virtual space, and is located within Oulu University Hospital. The concept and processes can be extended to cover real hospital wards and information systems.

Oamk SimLab, operated by the Oulu University of Applied Sciences, is a versatile simulation and studio environment, which is used as a learning environment for health and social professional education. Simlab can be used as a testing and development environment in the product development of health technology and welfare services, featuring considerable student involvement. Oamk SimLab covers bioanalytics, nursing and emergency nursing, optometry, oral health care, radiography and radiation therapy as well as rehabilitation. Oamk SimLab includes also UsabilityLab which supports usability testing of health technology devices and software. Oamk SimLab is located at the OuluHealth campus, in the University of Applied sciences premises.

Oulu CityLab, operated by the city of Oulu, is a test environment where the end-users are at customers' and patients' homes and in all social and health care services. The City of Oulu opened a technology healthcare centre in Kaakkuri area in Oulu in 2008. In addition to usual patient care, Kaakkuri healthcare centre contributes to the development of city's technology-enhanced processes and provides companies with a basic healthcare environment for product testing and development. Oulu CityLab testing operations extends to cover other social and health services in the city as well, including home care.

To summarize, OuluHealth Labs offers a realistic testing platform for the products and solutions that are on the development phase. Structured collaboration method between healthcare professionals and companies ensures effective utilization of resources. Feedback from the healthcare professionals in the development phase ensures that better products will be brought to the market. Through collaboration with other test beds in the Nordic countries, it is possible to test new products also in international context. Specialized healthcare can gain savings through ensuring the compatibility and functionality of the new technology solutions before procurement decisions.

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Kanta development project: Online school for Kanta services to support the work of social and health care professionals

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The Kanta services are already widely used in public healthcare in Finland and, with respect to ePrescriptions, also in private healthcare services. The use of the services and the utilisation of archived information are constantly expanding. Specialist healthcare and social welfare services will join the service even more extensively in the future. As a result, information related to the health and wellbeing of citizens and patients can be gathered in one place even more comprehensively within a single nationwide data repository. The professionals need coherent procedures and recording procedures in order to record high-quality customer and patient data. Joint procedures are based on up-to-date legislation and national definitions and guidelines and on their application in the operation of the organisations. With respect to the Kanta services, these joint procedures have been described at a national level, and they have been gathered into the Kanta services online school, which consists of learning modules to support the work of various occupational groups.

The development of Kanta services online schools was launched already over five years ago. At the same time, the first introductions of Kanta services were implemented in Finland, the first of which was the electronic prescription. At the time, a national online learning environment, encompassing the national operating models, was implemented in support of the use of electronic prescriptions. A separate section related to data security and protection in healthcare services was implemented in the same online environment, with particular attention being paid to the special characteristics related to the use of the Kanta services.

In the initial stage, the online school served mainly public sector professionals and hospital staff. Online training was also utilised by pharmacies, which were involved in the use of electronic prescriptions from the start. Separate training sections were created for pharmacy staff, describing the operating models for pharmacy work with respect to prescriptions.

In the next stage, the use of Kanta services expanded to the introduction of functionalities in the Patient Data Repository. In support of the use of these functions, separate learning modules were built in the online school, describing common procedures for different professional groups with respect to patient data archiving and disclosure of data.

As the use of Kanta expands, the online school will be developed further in line with new functions. The obligations complying with legislation, regulations and national guidelines and their application in professional work are taken into account in the contents. The development is also partly directed by specialist areas and professional groups joining the Kanta services. Examples of these include the introduction of oral healthcare, paramedic services and imaging. Social welfare professionals are also a large group joining at a later date.

The first stage of further development of the online environment has already been implemented, and the learning modules of electronic prescriptions have been updated to correspond with new legislation and other changes in guidelines. The development work is also directed by feedback received from practical operators. Based on the feedback, it is known that professionals have found previous online schools very informative and clarifying. According to the feedback, online schools have made it possible for professionals to learn independently and, when necessary, to revise and supplement their previous knowledge base on matters related to Kanta services. The online school has also acted as an efficient channel of disseminating information for both Finnish- and Swedish-speaking professionals. All learning entities have been carried out in both domestic languages.

Another important user group consists of the colleges and students of social and health care. Online schools are already used in the tuition of new professionals in the theoretical teaching stage. This facilitates the practical training of students as they have been able to learn about the Kanta services already before starting practical training.. Online schools also utilise various exercises and tests for professionals and organisations to make sure that a student has internalised the matters they have studied and is able to utilise the information in their own work. An online school has also been found useful in the induction training for professionals as the information gathered in the school is common and available to all.

The Kanta online school is a learning environment that is free of charge for its users, and it is easy to access and use. There are no restrictions to using the service, and therefore information can be utilised regardless of the time, place or equipment. The online environment enables presentation of a variety of materials, which serves different kinds of learners and learning situations. The environment also makes it possible to easily update the information, which ensures that the learners will always have smooth access to most up-to-date information

Feasibility of home-based cognitive telerehabilitation- a pilot study

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Background: Stroke often leads to various impairments in functional ability. Cognitive rehabilitation is performed to compensate for impairments in attention, memory, problem solving and communication, as well as visuospatial and executive skills. Home-based telerehabilitation shows promise in improving the health of stroke patients, especially those in remote locations [1]. Cognitive rehabilitation is still a rare use of telerehabilitation [2].

Aim: Assess the feasibility and usability of tablet-assisted neuropsychologic rehabilitation for patients with cerebrovascular disease.

Methods: Three patients undergoing post-stroke rehabilitation at the Oulu University Hospital participated in home-based cognitive rehabilitation supervised by one neuropsychologist. The rehabilitation took place in 2015. Subjects were selected based on their suitability for telerehabilitation (computer use, nature of impairments) and unavailability of traditional rehabilitation (distance). All subjects were female and aged 45-65 years. In the home environment, software developed by VideoVisit Oy, Finland, was used on a Lenovo Yoga2 tablet (10.1") with 4G connection. During the 6 month intervention, the participants had 20 scheduled 60-minute video sessions with the therapist, and were encouraged to play games on the tablet between sessions. The games were web-based, selected by rehabilitation professionals, and linked to from the platform. Opinions of telerehabilitation were measured with questionnaires before and after the intervention, and from the therapist at the end of the testing period. Perceived usefulness and perceived ease of use were each assessed with three questions modified from TAM [3] to suit rehabilitation.

Results: There were a number of technical problems with the 4G connection, as well as the tablet itself. 3G connection was not sufficient for videoconferencing. As a result, two of the participants could only complete 9 and 10 sessions, some of them with technically poor quality. The technical issues encountered included: time-consuming failures in creating a connection; unavailability of video connection; unstable connection causing games to shut down; looping and voice distortion; battery charging failing repeatedly; updates interrupting the sessions. However, all subjects and the therapist considered video communication useful, and all three patients would recommend telerehabilitation to others. Regular interaction and possibility for rehabilitation in daily activities were considered particularly beneficial. All patients had tried the games, but opinions of their usefulness varied. The perceived usefulness of the intervention was evaluated positively beforehand, but more poorly in the post-intervention survey with the users experiencing technical difficulties. Scores on perceived usability improved with all participants. Additional criticism was directed at the usability of the software not being simple enough for neurologic patients, and lack of touch feedback.

Conclusions: In Finland 2015, the technology was not yet ready for reliable telerehabilitation through videoconferencing in remote areas. Apart from technical difficulties, the experiences of both patients and therapist were positive.

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National and regional eHealth profiles of Finnish public healthcare in 2014

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Background: The eHealth availability and usage in Finnish healthcare has been evaluated by international surveys showing Finland being above the European average in acute healthcare organizations [1]. Among general practitioners Finland has been rated one of the six leading European countries in eHealth adoption [2]. However, these surveys were based on data obtained from sample of organizations or practitioners. Long-term and systematic evaluation of national eHealth availability and use in Finland has been done in 2005, 2007, 2011, and 2014 [3-6].

Aim: The aim of this study was to develop a way to describe national and regional eHealth profiles of Finnish primary and secondary healthcare organizations.

Materials and methods: The indicators for eHealth profiles were selected based on the international surveys modified to fit the national eHealth survey in 2014 [6] which was targeted for the public healthcare organizations.

For eHealth profiles 16 indicators were chosen. Availability of functionality was used for wireless use of electronic patient record (EPR), ePrescription, televideoconsultation, telemonitoring, exchange of clinical care information, exchange of laboratory results, exchange of radiology reports, and electronic identification and signature. Since the availability of EPR and some other core functionalities have been nationally saturated to 100% in public healthcare, the intensity of use was used as an indicator instead of availability. This was the case for EPR, Picture Archiving and Communication System (PACS), eReferral, consultation eReferral, and online appointment booking. Proportion of ICT skilled personnel was used as one indicator. Systems for professional decision making was rated by the integration level of two database application ('Terveysportti' and drug interactions database such as SFINX). Technical support for EPR was rated according to the availability. Each indicator was scaled from 0 (not available) to 10 (availability or intensity of use, 100%). Regional analyses for primary and secondary healthcare organizations were conducted based on the hospital district distributions.

Results: The national eHealth survey in 2014 included data from all hospital districts (N=21) and 88% of healthcare centers (population coverage 95%) providing a representative and exceptionally comprehensive evaluation of eHealth profiles. The highest performance in availability and intensity of use in specialized healthcare was found in EPR, wireless use of EPR, technical support for EPR, PACS, and personnel's computer skills. In addition, regional patient data repositories (RHIE) are widely used for data exchange. The national ePrescription with eSignature were fully adopted in public healthcare. Trends in primary healthcare follow the ones of secondary healthcare, thus lacking behind at some extent in terms of RHIE and wireless use of EPR. There is a minor use of telemonitoring, teleconsultation, and citizen services.

Conclusions: Finnish national eHealth survey provides national and regional analysis. In Finland the adoption of EPR happened first in primary care [5]. It seems that the further development of eHealth after this first adoption has been faster in the secondary care than in the primary care. Regionally secondary healthcare is leading the progress of eHealth development. These eHealth profiles are usable for international evaluations, national policy makers, and evaluation the eHealth development in the light of new social and health care strategies.

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Demonstration of user-driven prototyping of an open source and mobile EHR application for eye treatment purposes: case ASTE

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This poster presents a case demonstration for a proof-of-concept user interface prototype in implementing one of the first applications based on an open source Electronic Health Record initiative called ASTE. The case is designed to serve certain eye treatment purposes and care planning of an eye-specialized centre of a Finnish university hospital. The ultimate goal of the implementation is to replace most of remaining paper forms which are still used for collecting measurement results of eye inspections. This is also a trial to design such a tool for collecting clinical information in user and patient centric way, and to figure out how open sourced and modular EHR system concept could contribute an efficient way to deliver good quality eye care. Improved monitoring of inspection results and better clinical impact through more targeted operations is to be pursued by means of population backed prognosis.

Background: The Finnish open source initiative called Aste is a collaborative effort to build an open alternative for topical challenges in EHR system projects. Its founding community including software and design companies expects to make a difference in delivering tailored applications based on user needs and re-usable open sourced architecture. The author have followed the early stages of the initiative by joining face-to-face meetings and social media discussions related to the collaboration and associated topics. As most of the core architecture for Aste is being built from scratch just by couple of very enthusiastic software developers, the first prospective implementations are optimally limited enough in scope to get something practicable done in clinical settings from start to finish. One opportunity to conduct a pilot project was spotted in an eye-specialized centre related to paper forms which are still in use for collecting inspection measurement data and information on operations. The author volunteered for going on site to further figure out the user stories and actual requirements.

Purpose: Clinical processes in eye clinics operations appear to be efficient, but there is room for improving the overall clinical impact of the treatments. This would be realized by choosing better the patients whom diagnosis require certain treatment, operating the both eyes during a single visit when reasonable, and predicting timely need for scheduling an operation. Paper forms work out decently in hectic operations, but scanning them in non-structured capture image doesn't help much when searching for excellence in clinical impact. To keep it simple, the purpose is to collect all needed information straight into electronic form while making sure that associated work doesn't get any more complicated or time consuming than it is with the paper forms. Structured information is to be used for following up an individual patient's need for treatment, as well as for generating a population view for assessing and optimizing clinical impact.

Methods: User stories gathering, user interface prototyping and usability testing are applied for building up a proof-of-concept workflow with electronic forms. At first, the user stories are transformed into drawn prototype views of the idea how the system would look like and behave. These prototype views are tested out with the actual system users, such as doctors and nurses, by means of visual walkthrough of the clinical path from start to finish.

Results: Prototype views presented in the poster are reworked and improved after clinicians' experiences on their simulated use. These represent the minimum viable design to be handed over to software developers for further iterations towards one of the first pilot implementations in Aste collaboration.

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Adaptable Telemedicine for Underserved Communities

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We present a compact and adaptable telemedicine system that identifies subjects at risk from Non-Communicable Diseases (NCD) and treats them in their own environment. NCDs such as cardiovascular diseases, diabetes, cancer and chronic respiratory are characterized by long-duration with slow progression and are main causes of adult mortality and morbidity worldwide. The modifiable risk factors for these NCDs including overweightness/obesity, high blood pressure and elevated blood/urine sugar can be identified locally by off-the-shelf sensors and devices, and treated remotely using a basic telemedicine. We call the local-global system a Portable Health Clinic.

The Portable Health Clinic encapsulates an information network with online doctors, local healthcare workers, social business workers, and registered clients connected to the cloud computing resource. The network is actuated when a healthcare worker measure a client's NCD risk factors and stores the clinical data on a tablet. The healthcare worker's tablet has a triage application server synchronized, via wireless Internet connection, with a master triage server in the cloud. The local triage application decision algorithm classifies each sensor and device measurement into color-coded morbidity risk categories: green (safe), yellow (caution), orange (affected) and red (emergent), creates a client Personal Health Record (PHR), and notifies the healthcare worker via GUI. For triage measurements categorized as yellow, the healthcare worker gives the client wellness advice. For triage measurements categorized as orange and red, the healthcare worker sets up a telemedicine Skype call with an online doctor connected to the cloud. The online doctor views queued patients color-coded triage results before the Skype call is connected. During the call, the online doctor discusses the chief compliant and other symptoms with the connected patient. Subsequent to the consultancy, the online doctor transmits an e-prescription to the health worker to be given to the patient. The triage results and e-prescription are stored as a PHR in the cloud database. Client PHRs are retrievable and used for the next screening and intervention.

The Portable Health Clinic service was provided to 21,252 low-income villagers in 24 sites in Bangladesh during July 2012 to September 2013. Healthcare workers went to distant underserved villages and the online doctors remained in the capital, Dhaka. The gender breakdown of the validation campaign was 11,770 males and 9482 females. The results show that in some locations, up to 40% of low-income villagers screened required a telemedicine doctor consultancy. When we cross-tabulated the summed categorical data we saw that females tended to be more risk to the cardiovascular NCDs than males. The younger ages groups (20-40 years) tended to have high levels of urine sugar and require telemedicine than middle age groups (40-60 years). This suggests an increase prevalence of diabetes for younger cohorts. Geographical location had a strong effect on the results. Urine Protein results was more serious in specific sites than others. Elevated levels of Arrhythmia were common in 4 sites. The Portable Health Clinic continues to be used at remote villages and urban areas as social business.

The performance of the Portable Health Clinic is sensitive to the number of data items and triage threshold. More telemedicine links are generated with the addition of data items and lowering of the trigger (orange) threshold. The addition of new sensors and modification of the triage parameters enables the system to adapt to different use cases such as a healthcare worker social business startup for servicing elderly people in their houses, or a part-time paramedic taking a robust case of sensors/devices to an flood area and treat post-disaster victims. The Portable Clinic triage has recently been adapted for Indian underserved communities and Nordic remote and isolated communities.

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Implementation of wireless vital signs monitoring technologies from a hospital perspective

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BACKGROUND: Monitoring of patients' vital signs (heart rate, blood pressure, breath rate, oxygenation and consciousness) in hospital wards is traditionally performed manually for hospitalized patients by attending nurses every 8 to 12 hours. Deteriorating vital signs indicate high risk patients who need escalation of treatment and closer monitoring. Occationally, transfer to an intensive care unit based on failing vital signs is necessary to prevent extra morbidity and premature death.(1) 2-10% of all surgical and medical adult patients need treatment in an intensive care unit.

The evolution of wireless vital signs monitoring technology has made it possible to continuously monitor vital signs of patients in hospital wards. The allocation of 2483,5-2500MHz radio frequency spectrum to medical body area network systems (MBANSs) is expected to improve the wireless signal quality of sensing technologies and boost device development.(2) The safety, efficacy, effectiveness, ethical, social, organisational, professional, economic and legal implications of vital signs monitoring technology, however, must be recognized and evaluated systematically before decision-making for funding of a whole hospital system.

SETTING: Vaasa Central hospital is a public hospital run by 9 municipalities around the city of Vaasa, Finland. The hospital serves a population of 165000 inhabitants with 1390 nursing staff and 215 medical staff in 15 specialities. The hospital has 210 beds on surgical and medical wards. Altogether, the 21000 patients admitted annually, stay in the hospital for 56000 days, with a median length of stay of 2,7 days. Manual vital signs monitoring on the wards is issued according to hospital based standard operating procedures. The vital signs of the patients with highest risks of adverse outcome are monitored on-line with wired technology in the cardiac care unit (6 beds), the stroke unit (4 beds) and the intensive care unit (8 beds).

The hospital has a well-developed Rapid Response Team (RRT) serving patients on wards with deteriorating vital signs after nurse or doctor driven dispatch. RRT dispatches to wards 3 times per week (median). Every 5/1000 of admitted patients are transferred from wards acutely to the intensive care unit without prior elective planning. Of these only 20% are transferred by RRT activation – in the rest of cases there are multiple unidentified processes involved.

AIMS: The hospital-based patient monitoring board aims to formulate a mini-health technology assessment (mini-HTA) and update hospital guidelines of vital signs monitoring by December 2016.

METHODS: A multidisciplinary board with representation from all wards, medical, surgical and intensive care specialities as well as internet technology and medical technology services of the hospital.

TOOLS: A mini-HTA in the form of a pre-defined tool (a checklist) designed to advise evidence-based decision-making for funding when medical devices are introduced or adapted.(3) A hospital guideline regarding the implementation of wireless vital signs monitoring technologies on medical and surgical wards will accompany the mini-HTA.

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Kanta development project: Prescription Centre expands into National Medication List

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Electronic prescriptions are now well established in Finland, and dispencing drugs from pharmacies through the Prescription Centre is working well. At the end of 2016, when electronic prescriptions will become compulsory, there will be a browser-based application for issuing prescriptions, produced by Kela. It makeselectronic prescriptions available for every doctor. Also the pharmacies will be obliged to record paper or telephone prescriptions issued in exceptional circumstances in the Prescription Centre. Then the Prescription Centre will have comprehensive knowledge of the medication prescribed to the patient.

However, the Prescription Centre in its current form is not an effective instrument for managing the patient's medication information as a whole, as the prescription list is not the same as the patient's medication list. A drug can be ordered and medication can be changed without writing a prescription. On the other hand, it is not necessary to cancel the prescription if you cancel the use of a drug. With the current procedures, the Prescription Centre contains out-of-date information, but on the other hand not all medication ordered by a doctor or used by the patient can be seen in the Prescription Centre. For example, HIV medication handed over by healthcare organisations and the (long-acting) cytostatic medicines with considerable interactions with other medicines issued by them are not shown in the Prescription Centre.

The functionality of the Prescription Centre is now being developed to better support the use of medication data. The Ministry of Social Affairs and Health is preparing legislative changes related to the Prescription Centre, enabling the documentation of all medication data in the Prescription Centre and its utilisation comprehensively. At the same time, the recording and user rights of the Prescription Centre will be reviewed to better support patient work and to make it easier to keep medication data up-to-date. The National Medication List in the Prescription Centre, containing all medication data, is based on the electronic prescription data. A new identifier will be added to prescription data contents in order to reconcile medications prescribed at different times. That way, the up-to-date information about each medication can be identified and out-of-date prescription data can be updated. As it will be possible to record also prescriptions issued for dispencion overseas and by hospital pharmacies, and medication ordered without a prescription, there will be a comprehensive information about the patient's out-patient care medication in the Prescription Centre. The structured contents of medication documentation will be increased in connection with the reform. Many of the current problems will be solved by structured dosage. Patient data system can produce instructions for dosage and use of the drug for the patient mainly automatically, thus reducing any interpretation problems by the patient and the pharmacy. The structured dosage data required for automatic single dose distribution can be recorded already at the issuing stage, which means that the workflow can be simplified, manual transfer of information can be avoided and the possibility of mistakes is reduced. Furthermore, applications supporting decision-making will be able to prevent adverse effects resulting from incorrect dosing. All these will improve patient safety to a considerable extent.

The new Nätional Medication List based on the Prescription Centre will require functional – and attitudinal – changes in issuing medications. Medicines must not be issued without verifying the patient's complete medication. In future, the Nätional Medication List should always be checked first before prescribing a medicine. That way, patient's medication can be evaluated as a whole. If for some reason it is not possible to use the Nätional Medication List, it will not prevent issuing the medicine. The prescriptions (and oteh medication orders) will always update Medication List in the Prescription Centre, and the next issuer will have up-to-date medication data at their disposal.

Information about prescribed medicines alone will not tell the whole truth about the patient's medication. As a result of the reform, information about medication evaluations will be recorded in the Prescription Centre. At its simplest, it will be possible to verify with the patient whether he or she is using the prescribed medicines. This alone will provide better conditions for true improvement in medical treatment. When the patient will be able to record information about the medication they are using as a result of the development of the Personal Healht Record of My Kanta Pages, the complete picture of the actual medication the patient is using will be even more accurate, providing an increasingly effective drug treatment.

Once the use of electronic prescriptions becomes more comprehensive, the development project for the complete medication data will be able to proceed at last. THL and Kela will produce the definitions for the National Medication List during 2016. After that, Kela and the providers of patient and pharmacy data systems will be able to build their implementations. Joint testing of the systems is planned for the beginning of 2018, and the Kanta application enabling the production use of the medication list is scheduled for publication at the end of 2018. The deadline for recording medication data, as prescribed by law, is at the end of 2019.

Co-created Healthier Uusimaa

Anne Äyväri, Paula Lehto, Harri Haapaniemi
Laurea Unversity Applied Sciences

Laurea University of Applied Sciences coordinates "Co-created Healthier Uusimaa" project which implements Helsinki-Uusimaa region's Smart specialisation strategy's Human Health Tech priority. Project is funded by Helsinki-Uusimaa regional council (1.12.2015 - 30.9.2017).

The Co-created Healthier Uusimaa –project focuses on promoting innovative health tech services developed for active and independent health promotion and self-care supported by the professionals when needed. The project will organize workshops for enterprises, public and the third sector organisations and citizens to strengthen the competences in user-centric design and co-creation methods.

Ambition of the project

The ambition of the project is to bring together actors related and committed to the Human Health Tech theme in the region and form a network for long term co-operation. Project also aims to increase users' role in development of technologically advanced innovative solutions, products and services in health and wellbeing in different phases of the development process. This will help to collect new ideas for services and processes from user communities, users, and future professionals. New health and wellbeing business with innovators, start-ups or established companies are expected and encouraged during and after the project. In accordance with Helsinki-Uusimaa region's Smart specialisation strategy project aims to promote region's actors in international networks (EU Health KIC, ERRIN, ENoLL SIG) and promote region's share of international research and development funding (H2020, COST, Interreg).

Desired goals and outcomes

Aim of the project is to promote development of solutions which encourage people to take care of their own health and wellbeing and where professional´s role is guiding self-care in promoting health. There should be more International RDI initiatives in the field of health and wellbeing maximising the potential in Helsinki-Uusimaa region in order to reach global markets. One important step towards more user-centric development is to create of panels of users in the region (database of professionals' and citizens' user communities). Co-created healthier Uusima will propose action and roadmap for permanent panel activity.

Integrating mobile support for Hospital Information Systems

Pasi Meriläinen

Northern Ostro-Bothnia Hospital District

About Esko

Esko (EMR system) is developed in-house in Northern Ostro-Bothnia Hospital District (later stated as Oulu University Hospital, OUH). First Esko deployments were in Oulu in 1996 (Web based Esko 1998). Esko is in use in four hospital districts. Totally there are about 10 000 end users using Esko.

The Esko product family consists of the following modules: Electronic Patient Record, Medication (special support for cancer treatment included), Referral / Discards letters, Treatment plan, Permission and denials, Anesthesia, Operation Information System, eArchive, Physiological measurements, Regional Esko, Mediform (for helping secretaries), Diagnosis and Risks, Access right management and Mobile solution (Hoitu). ESKO has been rated as the best EMR in Finland by Finnish physicians two times in a row (Finnish Medical Journal 2014: 49: 3361-3371, Finnish Medical Journal 2010: 50-52; 4185-4194).

HIMSS Emram evaluation has been done for the Oulu University Hospital during 013 – 2014. The evaluation took into account both work processes and information systems. OUH scored 5,4660 (evaluation scale from stage 0 to stage 7). Basically information systems could reach stage 6, but they would not been used in the same way in all wards.

Research and Development

OUH uses agile methods in SW R&D. Clinical experts are essential part of core development team. They participate to all development planning and review meetings and prioritize and clarify requirements. The agile method usage in R&D enables quick adaptation of new requirements, even in the late phase of the project. Focus is tightly in the real issues by keeping clinical experts involved in the development and using agile methods. In technology sense, first modern solutions based on the multilayer architecture have been released more than six years ago.

We also have a couple of SW components that have been classified as medical devices. We are following several standards in our development, e.g. ISO 13485 (requirements for a quality management system).

Usability

Usability in the development process is taken into account in the several phases. Usability tests are done for all new modules and major features. Usability tests are planned as close to real work as possible. Testers in the usability tests are always end users (such as doctors and nurses) of the System. Usability tests are a great way to find possible usability problems already in the development phase (in this phase fixing problems are both easier and cheaper than in production phase).

Designing SW for Mobile usage, Case Hoitu

There were still some papers in use in ER. Several 3rd party solutions were evaluated, but none of them fit to the need or meet the speed requirements for emergency room usage. Hoitu project started in the March 2014, first usage in ER started March 2016.

Analyze why mobile

First of all, everything does not have to be mobile. In our case, we studied in the beginning of the project that, in what kind of the situations mobile usage is needed, how often mobile solution need to be used, how easy would it will be to use (e.g. carry around, place to put, when not used etc.). Our conclusion was that true mobile solution is needed. Portability was not enough (PAD) for us, because it is too heavy. Too big hardware is unpleasant to use (heavy), difficult to carry and tricky to handle, when patient needs a full attention.

Challenges

There are several challenges to solve when developing mobile solutions. Touch screen, a small screen and input devices are the most obvious ones. It is easy to make errors with touch screen and it is slow to write. Also presenting enough information with the small screen is challenging. Robustness needs also special attention, mobile solutions need to be extremely robust, e.g. loss of network connection must be handled properly. Mobile browsers are not as sophisticated as browsers in desktop computers, there are some technological challenges due to this. Mobile phones and their operating systems reforms often, this would have been a big risk with a native solution.

Our solution

In our solution, we have taken in account and solved all of the previous challenges. Our product has been designed for the mobile use right from the start. Basic technology used was HTML5 with thin native application. This enables portability of our solution for different platforms. Application distribution is also easy. Mobile hardware was carefully picked. Several different sizes of the hardware tested with users before most usable size for work need was found. Clinical experts have been part of our core team. We also run several usability tests and made lot of usability improvements based on the results.

Utilize new technologies

We have also utilized new technologies in our development, e.g. NFC (Near Field Communication). We have been able to enable more fluent workflow by using NFC in following situations:

- Log in by using certificate card of professionals
  - User can log in by touching his card and filling in the pin code.
- Patient identification
  - Patient can be identified by touching patient's bracelet (NFC sticker is needed).
- Transfer patient context between computer and mobile
  - Nurse can come to the doctor in the emergency room and e.g. to discuss with doctor about patients medication. Nurse touches the laptop with the mobile device and doctor immediately sees the patient and his medication on his own laptop screen.
- Track Patient location

Collaboration

Hoitu supports the following collaboration:

- Patients in the emergency room listed (also by team views)
- Patient triage
- Status of Laboratory and X-ray requests and replies are shown
- Updated data immediately shown in other devices.
- Collaboration between doctors and nurses

Utilize existing solutions

Existing solutions have been re-used in Hoitu, e.g. Medication support. By using existing medication module, business logic is in the medication module, not in the Hoitu. This gives us optimal modularity and is cost efficient because complex logic is built only in the one place and data is stored only in the one place.

The Medication module of Esko has been expanded with mobile support for touch/small screens. Mobile medication supports showing list of patient medication, prescription can be done (infusion and pills), interactivity warnings are shown and registration of given medication can be done.

Subcommittees of the society / Seuran jaokset

Opetus- ja tutkimusjaos / Subcommittee for education and research

- Tehtävä seurata koulutukseen liittyviä tutkimuksia, koulutuksellisia tarpeita ja tiedottaa niistä
- Tietoa levitetään myös alan kansallisista ja kansainvälisistä konferenseista ja niihin osallistumisesta
- Opetus- ja tutkimusjaos järjestää vuosittain seminaarin ajankohtaisesta telelääketieteen ja eHealth-alueen aiheesta, yhteistyössä Sosiaali- ja terveydenhuollon tietojenkäsittely-yhdistyksen (STTY) kanssa

Yhteyshenkilöt:
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Yritysjaos / Subcommittee for enterprise members

- Toimii verkostona telelääketieteen ja eHealth – alueesta kiinnostuneille yrityksille
- Järjestää yrityksiä kiinnostavia seminaareja ja workshoppeja tarpeen mukaan
- Tiedottaa ajankohtaisista asioista ja koulutuksista

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Viron alajaos / Estonian sub organisation

- Estonian Telemedicine Association was established as a suborganization of the Finnish Society of Telemedicine and eHealth in 2007 in close relation with Estonian eHealth Foundation
- The goal of the Estonian Telemedicine Association is to connect the promoters of the Estonian telemedicine and eHealth through establishing cooperation and discussion forum

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Finnish Society of Telemedicine and eHealth
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Terveydenhuollon tietotekniikan erityispätevyys

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FinnTelemedicum, lääketieteellisen kuvantamisen, fysiikan ja tekniikan tutkimusryhmä, Oulun Yliopisto
Terveydenhuollon erityispätevyystoimikunnan puheenjohtaja, Suomen telelääketieteen ja eHealth seura

Yhteenveto:
Terveydenhuollon tietotekniikan (e-terveyden) erityispätevyys edistää lääkärien ja hammaslääkärien kiinnostusta ja sitoutumista terveydenhuollon tietoteknologian kehitykseen. Suomi perusti erityispätevyyden ensimmäisenä maana joulukuussa 2012 ja tällä hetkellä lähes 90 lääkäriä ja hammaslääkäriä on joko suorittanut pätevyyden tai ilmoittautunut koulutukseen. Erityispätevyydestä vastaavat yhdessä Suomen telelääketieteen ja eHealth seura, Suomen Lääkäriliitto ja Suomen Hammaslääkäriliitto.

Tausta ja tavoitteet:
Erityispätevyys terveydenhuollon tietotekniikkaan tarvitaan täydentämään sitä koulutustarvetta, jota nykyiseen erikoislääkärikoulutukseen ei sisälly. 2000-luvulla tietotekniikasta on tullut lääkärin työn perustyökalu ja strateginen muutosvoima. Tällä hetkellä Suomen julkisessa terveydenhuollossa käytetään kaikissa perusterveydenhuollon ja erikoissairaanhoidon yksiköissä sähköisiä sairaskertomusohjelmistoja eli niiden levinneisyys on maassamme 100 % toimipisteistä (1). Telelääketiede ja e-terveyden ratkaisut ovat kasvava osa terveydenhuollon organisaatioita ja prosesseja. Ne ulottuvat nykyisellään ammattilaisten välisistä konsultaatiopalveluista asiakkaille suunnattuihin suoriin palveluihin ja omahoitoratkaisuihin (2).

Korkeimmin koulutettuina alan ammattilaisina lääkärien ja hammaslääkärien panos terveydenhuollon tietotekniikan ja sähköisten terveyspalvelujen kehittämisessä ja käyttöönotossa tulee jatkossa olemaan ratkaiseva (3). Tietojärjestelmien käytettävyystutkimukset ovat osoittaneet lääkärien suuremmalle osallistumiselle olevan tarvetta. Tähän asti vaikuttaminen on usein perustunut omaan kiinnostukseen ja harrastuneisuuteen, varsin harvoilla lääkäritoimijalla on lääketieteen koulutuksen lisäksi muuta koulutusta tekniikan alalta. Terveydenhuollon tietotekniikan (e-terveyden) erityispätevyyden tavoitteena on luoda asiantuntijalääkärien verkosto, joka toimii alan yritysten, tutkimuslaitosten ja muiden toimijoiden yhteistyökumppanina. Terveydenhuollon tietotekniikan erityispätevyys tarjoaa lääkäreille ja hammaslääkäreille jäsennellyn, nykyaikaisen tavan kehittää osaamistaan terveydenhuollon tietotekniikassa ja tiedonhallinnassa sekä motivoivan urakehitysmahdollisuuden.

Koulutusohjelman sisältö:
Erityispätevyyden omaavan tulee olla pohjakoulutukseltaan Suomessa laillistettu lääkäri tai hammaslääkäri. Pääsääntöisesti edellytetään erikoislääkärin pätevyyttä. Erityispätevyys voidaan poikkeuksellisesti myöntää myös hakijalle, jolla ei ole erikoislääkärin pätevyyttä, mutta joka muuten ansioiltaan täyttää erityispätevyyden edellytykset. Kuitenkin edellytetään vähintään viiden vuoden kokemusta lääkärin työstä valmiina lääkärinä.

Varsinainen erityispätevyyden kerryttäminen koostuu kahden vuoden palveluista toimialan tehtävissä sekä erityispätevyyden ohjeissa määritellyistä teoreettisista koulutuksista. Palvelujen tulee olla monipuolisia kehittämis- koulutus- ja tutkimustehtäviä, pelkkä jonkin tietojärjestelmän käyttö tai käytön ohjaus pääkäyttäjänä ei riitä palveluksi. Palvelut voi suorittaa myös osa-aikaisissa toimissa, silloin palvelujen ajan ja sisällön on oltava dokumentoitavissa. Teoreettisissa koulutuksissa suositetaan alan oppilaitosten koulutustarjontaa, mutta niitä voi kerätä myös konferensseissa ja lyhyemmissä koulutustapahtumissa. Koulutuksiin tulee sisällyttää osallistuminen kansainvälisiin e-terveyden kongresseihin. Alan tutkimustyöllä voi myös korvata osan vaatimuksista.

Koska erityispätevyydestä ei vaadita tenttiä, on tärkeää kuvata koulutuksen suorittaminen ja oma osaaminen tarkasti erikseen laadittavaan portfolioon, jonka tarkastavat nimetyt asiantuntijat ja jonka perusteella erityispätevyystoimikunta tekee päätöksensä. Portfoliopohjan saa ladattua Suomen Lääkäriliiton erityispätevyyssivuilta ja sitä käytetään hyväksi erityispätevyysohjelmaan ilmoittautuessa, opastuksena suoritusten keräämiseen ja lopulta pätevyyttä haettaessa. Yksityiskohtaisemmat ohjeet löytyvät osoitteesta: http://www.laakariliitto.fi/koulutus/erityispatevyydet/tietotekniikka/

Tähänastiset tulokset:
Huhtikuun 2016 alkuun mennessä erityispätevyysohjelmaan hakijoita oli yhteensä 85, joista 81 lääkäriä ja neljä hammaslääkäriä. Lääkäreistä suurin osa oli hankkinut palvelunsa joulukuussa 2015 päättyneillä siirtymäsäännöksillä, joissa hyväksyttiin laajasti aikaisempia palveluita. Hammaslääkärit pääsivät mukaan

ohjelmaan lokakuusta 2015 lähtien ja heillä siirtymäkausi jatkuu kolme vuotta lokakuuhun 2018. Myönnettyjä erityispätevyyksiä oli huhtikuun 2016 alussa 58, joista lääkäreillä 55 ja hammaslääkäreillä kolme.

Erityispätevyyteen johtaneita palveluita oli kerrytetty monipuolisesti eri tehtävissä, suurella osalla oli palvelua erilaisissa tietotekniikan ja ohjelmistoalan projekteissa, mutta mukana on myös tietohallintolääkärin, järjestelmä- ja palvelukehittäjän, kaupallisen yrityksen sekä tutkimuksen ja koulutuksen tehtävissä toimineita. Huhtikuun alun tilanteessa lisäsuorituksia koulutusohjelmassa kerää 26 lääkäriä ja yksi hammaslääkäri. Suoritusten arviointi on tehty kahden asiantuntijan toimesta ja erityispätevyyden edellytyksien täyttymisestä on päätetty Suomen telelääketieteen ja eHealth seuran asettamassa toimikunnassa. Erityispätevyydet ovat toimikunnan esityksestä myöntäneet Lääkäriliitto ja Hammaslääkäriliitto jäsenilleen.

Tulevaisuuden näkymät:
Lääkäreiden osalta erityispätevyys suoritetaan jatkossa henkilökohtaisen kouluttautumisohjelman mukaisesti. Siksi koulutukseen tuleva saa tuekseen oman mentorin aiemmista pätevyyden suorittaneista. Pätevöityjän oma portfolio on keskeinen työväline, siksi sitä on kehitetty ohjaamaan kouluttautumista aiempaa tarkemmin. Teoreettiset koulutukset ovat tällä hetkellä koostuneet pienistä osista, joten toimikunta koostaa tietopaketin helpottamaan pätevöityjien valintoja. Jatkossa toivotaan yliopistojen ja ammattikorkeakoulujen e-terveyden koulutusten kehittyvän ja ottavan huomioon nämäkin tarpeet. Hammaslääkärien osalta otetaan heidän erityistarpeensa huomioon suoritusten keräämisessä.

Terveydenhuollon ammattilaisten osaaminen on saatu parempaan käyttöön tietotekniikan erityispätevyyden kautta nykyisessä tilanteessa, jossa tietojärjestelmät ovat keskeinen muutoksen mahdollistaja. Saadun palautteen perusteella moni nyt pätevyyden suorittanut on hakeutunut johtaviin asiantuntijatehtäviin tai esimiesasemaan. Terveydenhuollon prosessiosaamisella on keskeinen asema sote-uudistuksen ja kansalaisille tuotettujen mobiilien terveyspalvelujen toteuttamisessa. Jatkossa on tarpeen tuoda sähköisten terveyspalvelujen opetus osaksi lääkäreiden ja hammaslääkäreiden perusopetusta.

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Special competence for healthcare information technology

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Chairman of the committee of the special competence for healthcare information technology

Biography Jarmo Reponen
MD, PhD, Head of radiology at Raahe hospital, Professor of healthcare information systems (eHealth) and head of FinnTelemedicum research unit at the University of Oulu, Finland. He has more than 25 years of experience in the development, implementation and research of hospital information systems, especially in the field of electronic patient record, radiology and mobile systems. He has served many national and international organizations in the eHealth domain either as a chairman or as a board member. He has also influenced many international conferences either as a principal organizer or as an invited lecturer

Finland was to our knowledge the first country to establish since 2012 a special competence for healthcare information technology to physicians and since 2015 to dentists. The special competence requires two year full time service and theoretical studies after a qualified medical specialist consultant status. Those who have earned the title are thus already experienced doctors and dentists. The new competence gives them an ability to utilize their knowledge about health care processes for the benefit of the new eHealth and mHealth services. Those graduated have found positions as leading health care IT experts or in administrative tasks in regional or national health IT projects. Already nearly 90 doctors and dentists have been enrolled to the program which is a joint effort of Finnish Society of Telemedicne and eHealth, Finnish Medical Association and Finnish Dental Association

The International Society for Telemedicine & eHealth (ISfTeH)

> **Mission Statement**
>
> The International Society for Telemedicine & eHealth (ISfTeH) exists to facilitate the international dissemination of knowledge and experience in Telemedicine and eHealth, to provide access to recognised experts in the field worldwide, and to offer unprecedented networking opportunities to the international Telemedicine and eHealth community.

The International Society for Telemedicine & eHealth is THE international federation of national associations who represent their country's Telemedicine and eHealth stakeholders. The ISfTeH is also open to additional associations, institutions, companies and individuals with a keen interest in the subject of Telemedicine and eHealth, or with activities that are relevant to this field.

The ISfTeH fosters the sharing of knowledge and experiences across organizations and across borders and aims to promote the widespread use of ICT tools and solutions in health and social care in order to:
- improve access to healthcare services
- improve quality of care
- improve prevention
- reduce medical errors
- integrate care pathways
- share and exchange information with citizens/patients
- reduce costs

Since 2008, the ISfTeH has also been awarded the status of "NGO in Official Relation with the World Health Organization", making it the international reference in Telemedicine and eHealth for health policy makers from around the world. Through its national member associations and through courses and conferences, the ISfTeH does participate in the establishment of eHealth training and implementation plans, and provides assistance and education where needed.

Join our network of member organizations from over 91 countries and territories around the world (…and growing). The ISfTeH is your door to the global Telemedicine and eHealth community. Through its various activities and members, the ISfTeH can assist you in the promotion and dissemination of your research; help you to enhance your healthcare services with new ICT tools and technologies; provide ideas to broaden your educational programs and courses; and widen your international business network.

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NGO in official
relation with WHO

Integrating the Healthcare Enterprise (IHE) in Finland

IHE (Integrating the Healthcare Enterprise) is an international non-profit organization that works to improve the way healthcare systems share information electronically. IHE encourages the use of established interoperability standards such as HL7 and DICOM and strives to solve specific integration problems faced by its members in the real world through Integration Profiles. IHE Finland is a member of IHE International. IHE Finland has 39 members (January 2016).

BENEFITS OF USING IHE

- Optimize clinical workflow and strengthen the information link between different departments
- Streamline the flow of clinical information, reduce errors and improve efficiency
- Simpler integration and implementation
- IHE profiles fill the gap between standards and systems integration
- Clear path toward acquiring integrated systems
- Common framework and better communication for vendors and purchasers
- Flexibility while ensuring that key integration needs are met
- Provides common workflow and reduces the need for tailoring
- International development and publication of IHE Technical Frameworks

WHAT'S NEW

- IHE Finland has been pre-approved for IHE Europe member in December 2015. The official vote will be held in IHE Symposium 12.04.2016.
- IHE Europe Connectathon and Symposium in Bochum 11.-15.04.2016.
- IHE Finland organizes IHE & FHIR training on 17.-18.05.2016.
- IHE support project going on to regularize IHE activities in Finland
- Background information, such as description of IHE procedures in Finland, essential IHE specifications in imaging as well as IHE utilization report by TEKES and FiHTA

WAYS OF WORKING

- **Integration Profile Specification**: technical specifications for implementing standards
- **Connectathon**: opportunity for vendors to test the interoperability of their products with peer vendors
- **Projectathon**: tests your project specific configurations (vocabulary, document types, workflows, etc) in the context of the IHE profiles working together
- Prefences for established, complete standards
- Forum for collecting integration requirements, developing profiles and testing, for both vendor and user organizations

JOIN US

- IHE activities directed to the needs of Finnish organizations
- Workshops organized to define focus points
- Support for concrete development projects
- National procurements start to require IHE profiles
- IHE Finland workshops are open to IHE Finland members
- Profiles and reports are free for evaluation and use
- To follow and participate
  http://www.hl7.fi/hl7-finland-liity-yhdistykseen
  http://www.hl7.fi/sig-toiminta/ihe-sig/
- Join our mailing list and LinkedIn group!

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Integrating the Healthcare Enterprise (IHE) Suomessa

IHE (Integrating the Healthcare Enterprise) on kansainvälinen yhteisö, joka määrittelee standardeihin perustuvia profiileja terveydenhuollon tietojärjestelmien integrointiin ja järjestää niitä tukevaa testausta ja esittelytilaisuuksia. Toimintaan kuuluu kansainvälinen ratkaisujen määrittely ja kansallisten käyttöönottojen ja tarkennusten tukeminen. IHE Finland on IHE Internationalin virallinen jäsen.

TAVOITELTUJA HYÖTYJÄ

- Integraation helpottaminen, standardien valinta ja edistäminen (mm. sähköisen potilaskertomuksen edistäminen)
- Toistettavan työn ja räätälöinnin väheneminen
- Tilaaja/toimittaja-kommunikaation tehostuminen
- Tuotteiden helpompi yhdistäminen muiden profiilia noudattavien kanssa
- Työnkulkujen tehokkuus, parhaat käytännöt
- Virhemahdollisuuksien väheneminen
- Tiedonsaannin tehokkuus
- Organisaatioiden sisäisen ja välisen integroinnin mallit
- Ratkaisujen toimivuuden testaaminen ja esittely
- Kansainväliset markkinat
- Testauksen järjestäminen

TOIMINTAMUODOT

- **Integrointiprofiilit** (standardien soveltaminen tiettyyn määriteltyyn työnkulkuun) - **Integration Profiles**
- **Testaustapahtumat** (profiilien mukaisten tuotetoteutusten testaus yhdessä) - **Connectathon**
- Projektikohtaiset testaustapahtumat: projektikohtaisten konfiguraatioiden (sanasto, dokumenttityypit, työnkulut jne.) testaaminen IHE-profiilien kanssa - **Projectathon**
- Vakiintuneiden "valmiiden" standardien suosiminen
- Foorumi integrointivaatimusten keräämiselle, profiilien kehittämiselle, testaukselle, käyttäjäorganisaatioille ja yrityksille

AJANKOHTAISTA

- IHE Finland esihyväksytty IHE Europen jäseneksi joulukuussa 2015. Virallinen äänestys IHE Europen Symposiumissa 12.04.2016.
- IHE Europen Connectathon ja IHE Symposium Bochumissa 11.-15.04.2016
- IHE Finland järjestää 17.-18.05.2016 kaksipäiväisen IHE&FHIR –koulutuksen
- IHE Finland -tukiprojekti meneillään toiminnan vakiinnuttamiseksi
- Taustatietoja ja -kartoituksia saatavilla, mm. Suomen IHE-toimintamalli ja kuvantamisen keskeiset IHE-määrittelyt sekä TEKES:in ja Terveysteknologian liiton (FiHTA) IHE-hyödyntämisselvitys

MITEN MUKAAN

- Toiminnan suuntaamista tehdään suomalaisten toimijoiden ajankohtaisten tarpeiden pohjalta
- Tulossa työkokouksia painopisteiden tarkentamiseen, tukea konkreettisille kehityshankkeille
- Kotimaisissa hankinnoissa alettu vaatia IHE-profiileja ja viitata niihin kansallisissa määrittelyissä
- IHE Finland-kokoukset avoimia IHE Finland jäsenorganisaatioille
- Profiilit ja tehdyt selvitykset saatavilla ilmaiseksi arviointiin ja käyttöön
- Seurantaa ja osallistumista varten yhteystiedot alla: http://www.hl7.fi/hl7-finland-liity-yhdistykseen http://www.hl7.fi/sig-toiminta/ihe-sig/
- Liity IHE Finlandin sähköpostilistalle ja LinkedIn-ryhmään!

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Finnish Journal of eHealth and eWelfare

http://www.finjehew.fi

Finnish Journal of eHealth and eWelfare (FinJeHeW) is a scientific journal established by the Finnish Society of Telemedicine and eHealth (FSTeH) and the Finnish Social and Health Informatics Association (FinnSHIA), and it also serves as the official journal for the members of the establishers.

The Journal was established in 2009. The aim of the Journal is to promote scientific research, communication and education in the fields of information and communication technology relating to social and health care, telemedicine, eHealth and eWelbeing.

Financial assistance has been granted to the journal by the Federation of Finnish Learned Societies since 2010. FinJeHeW benefits the members of the associations further by functioning as an information channel, multidisciplinary publication forum, and supporter for the international network.

The Journal welcomes articles on information and communication technology of social and health care, telemedicine, eHealth, and eWelbeing. Instructions for authors can be found on the Journal website. FinJeHeW is mainly a Finnish language journal, but also includes articles, abstracts and other material in English and, if necessary, in Swedish as well. All submitted manuscripts are evaluated by the editor. Manuscripts that are considered suitable for publication in the Journal are sent to two referees for assessment The Journal is published in electronic form and includes four issues per year. Each issue can be accessed free of charge three months after the date of publication. Before that, the journal can be accessed by way of usernames and passwords of the members of the related associations, or an author password issued by the editor.

Journal ISSN index is 1798-0798, journal is on-going for PubMed indexing.

Contact information:

Finnish Journal of eHealth and eWelfare

http://www.finjehew.fi

FinJeHeW on Suomen Telelääketieteen ja eHealth-seuran ja Sosiaali- ja terveydenhuollon tietojenkäsittely-yhdistyksen yhteisesti perustama tieteellinen lehti, joka palvelee myös jäsenlehtenä.

Lehden tarkoituksena on edistää tieteellisten perustajaseurojensa Suomen Telelääketieteen ja eHealth-seuran (STeHS) eli Finnish Society of Telemedicine and eHealth (FSTeH) (www.telemedicine.fi) ja Sosiaali- ja terveydenhuollon tietojenkäsittely-yhdistyksen (STTY) eli Finnish Social and Health Informatics Association (FinnSHIA), (www.stty.org) edustamien tieteenalojen tieteellistä julkaisutoimintaa, kokouksia ja seminaareja. Se toimii myös seurojensa jäsenten ja muiden asiasta kiinnostuneiden tiedotuskanavana ja yhdyssiteenä sekä valistustyön ja koulutuksen tuottajana ja välittäjänä. FinJeHeW:lle on vuodesta 2010 myönnetty vuosittainen Tieteellisten seurojen valtuuskunnan julkaisutuki.

Lehti ottaa vastaan tieteellisiä artikkeleita sekä muuta aineistoa sosiaali- ja terveydenhuollon informaatioteknologiasta, telelääketieteestä ja eHealth-alalta. Kirjoitusohjeet ovat lehden sivustolla. Lehti on pääasiassa suomenkielinen, mutta siinä on artikkeleita, niiden tiivistelmiä ja muuta aineistoa englanniksi ja tarpeen mukaan myös ruotsiksi. Lehti noudattaa käsikirjoitusten arvioinnissa kahden refereen menettelyä. Lehti ilmestyy ainakin neljä numeroa vuodessa verkkojulkaisuna pdf-muodossa. Lehden kukin numero on vapaasti saatavissa verkosta 3 kk kuluttua ilmestymisestä, sitä ennen seurojen jäsentunnuksin tai kirjoittajatunnuksin

Lehden ISSN-tunnus on 1798-0798, lehti on hakeutumassa PubMed-tietokantaan

Toimitusneuvoston muodostavat Jarmo Reponen (STeHS), puheenjohtaja, Kalevi Virta (yrityssektori), Alpo Värri (STTY), Ulla- Mari Kinnunen (STTY), Ari Pätsi (tietohallinto), Pirkko Kouri (STeHS) ja Maritta Korhonen (julkinen sektori, tietohallinto). Toimitusneuvoston sihteerinä on vastaava päätoimittaja.

Lehden vastaava päätoimittaja on Kristiina Häyrinen.

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Tomorrow's Health Is Already Here: Virtual Clinic

Smart and connected self-care services may produce significant return on investment if and when they are applied nationally. The pioneers in self care are jointly preparing a national self-care service solution in the Self Care and Digital Value Services (ODA) project.

The aim is that, in the future, anyone can use their personal health account to save data gathered from, for instance, mobile applications or measuring devices. If they wish, citizens can also allow this information to be used for new kinds of self-care services and by social and healthcare professionals. Self-conducted health checks online, well-being training and the assessment of symptoms are all examples of smart online services that will be available to an increasing number of Finns in the years to come. These new health services are part of the virtual clinic model, in which people's own medical data can be linked to new types of service models and the healthcare system.

Presentation: Ville Koiste, The Finnish Innovation Fund Sitra: " People-Centred and Knowledge-Powered Health Services" – April 14ᵗʰ 2016

More information about Sitra and its projects related to self care: http://www.sitra.fi/en/well-being/self-care

SITRA

Huomisen terveys on jo täällä: virtuaaliklinikka

Älykkäät ja verkkovälitteiset omahoitopalvelut voivat tuottaa yhteiskunnalle merkittäviä säästöjä suhteessa vaadittaviin satsauksiin, kun ne otetaan käyttöön valtakunnallisesti. Tieto ilmenee ODA-hankkeesta (Omahoito ja digitaaliset arvopalvelut) tehdystä kustannushyötyarviosta. ODA perustuu Sitran yhdessä kumppanien kanssa luomaan virtuaaliklinikka-konseptiin.

Samalla suomalaiset saavat entistä parempia ja helpommin saavutettavissa olevia palveluja. Virtuaaliklinikan palveluun pääsee aina helposti ja vaivattomasti internetin ja kännykän avulla. Helppokäyttöisyyteen satsataan, jotta kaikki pystyisivät käyttämään palveluita. Sitran tulevaisuuden visiossa terveystarkastuksen tai oirearvion voi tehdä myös esimerkiksi ostoskeskusten, apteekkien tai metroasemien yhteydessä sijaitsevissa omahoitopisteissä, joissa on saatavilla virtuaalinen yhteys terveydenhuollon ammattilaiseen.

Puheenvuoro: Ville Koiste, Sitra: ”People-Centred and Knowledge-Powered Health Services” –14.4.2016

Lue lisää työstämme omahoitoon liittyen: http://www.sitra.fi/hyvinvointi/omahoito

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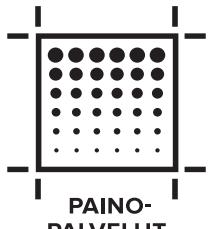
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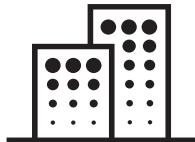
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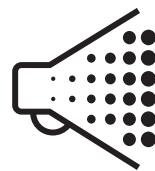
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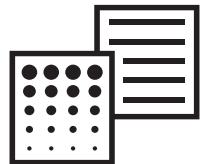
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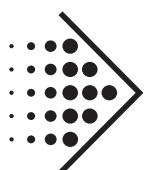
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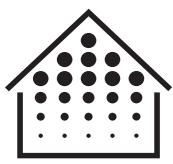
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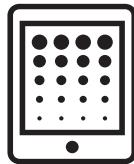
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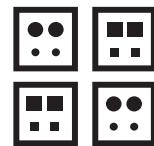
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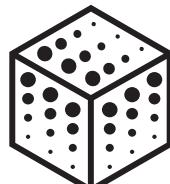
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