How far are we in eHealth implementation?

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Nordic workshop at the eHealth week 2016, Tuesday 07.06.2016, Amsterdam
Discussion of eHealth implementation in the Nordic - Contents:

- Background information,
- EU benchmarking: the status of digital services
- Nordic ehealth Research Network (NeRN):
  - Results of common eHealth indicators:
    - Availability and usage rate
- Similarities and dissimilarities
- Nordic Living Lab for eHealth?
Expert group at the Research Centre of Medical Imaging, Physics and Technology (MIPT)

Research Topics:

- Effects of digitalization in health care
- Evaluation of health ICT software applications: availability, intensity of use and usability
- Nordic and International benchmarking
- Empowerment of patients and citizens – and professionals in future hospitals
- Mobile networks (5G) and solutions for selfcare (apps)

Education:
Basics in eHealth

- Web-based course, 5 ECTS credits
- Virtual learning environment Optima
- Part of the Master of Circumpolar Health – program
- Part of the English language Master degree studies in Medical Technology
- Home base for speciality studies for physicians.
Governance based on knowledge

- **FinnTelemedicum/University of Oulu** and National Institute for Health and Welfare (THL) have surveyed Finnish health information systems since 2003. Every single public health care unit has been contacted (1,2).

- In current STEPS study 2013-2016: **availability and intensity of use of ICT** in health care and social care, also professional **user experiences** (Reports 2,3 with Aalto University and Finnish Medical Association) and **citizen opinions** of ICT.


The 2016 "European Digital Progress Report” (rel 23.5.2016)

• The analysis shows that Member States are at very different stages in the development of the digital economy

• Some, for example, such as the Nordic countries, are among the most advanced in the world, whilst other still have a lot of catching up to do.

• An example of a successful pilot is the cross-border use of electronic prescription between Finland and Sweden in Torneå river valley. There are ongoing discussions to proceed into full production use during this decennium.
The Digital Economy & Society Index (DESI) 2016,
28 Member states: different stages of development, developing at different paces

eHealth in 2013: citizens: seeking online health information

Source: http://digital-agenda-data.eu/charts/
eHealth in 2014: appointment via a website

Source: http://digital-agenda-data.eu/charts/
eHealth in 2013: GPs using electronic transfer of prescriptions

GPs using electronic networks to transfer prescriptions to pharmacists

Source: http://digital-agenda-data.eu/charts/
eHealth in 2013: GPs exchanging data with other providers

Source: http://digital-agenda-data.eu/charts/
The Nordic eHealth Research Network was established in 2012. Finland is represented by THL /National Institute of Health and Welfare and FinnTelemedicum / University of Oulu. Supported by Nordic Minister Council. Close collaboration with OECD eHealth work.

First report shows similarities and also some differences in the eHealth policies, priorities and implementation. Interesting similarities and differences in availability and use of eHealth services in the Nordic countries were found with the first comparable eHealth indicators.

The results create a basis for Evidence-based policy making as well as benchmarking and learning best practices from each.
M1: Overall strategy profiles in different countries, status 2013

improving interoperability, process support, quality and efficiency.

mentioning of different stakeholders in the strategy documents

Stakeholder involvement

efficiency, making data available for leadership and management, information security and privacy

improving IT-system architecture

Technical infrastructure

usability of, and access to systems and information, healthcare quality, supporting research and education and improving availability of healthcare data for secondary use

Clinical infrastructure

Governance

Finland

Sweden

Denmark

Norway

Business support

20

15

10

5

0

45

40

35

30

25

20

15

10

5
### M1: What is currently being measured in the Nordic surveys? What is missing?

<table>
<thead>
<tr>
<th>Indicator / measure</th>
<th>Fi</th>
<th>No</th>
<th>DK</th>
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</thead>
<tbody>
<tr>
<td>System availability (proportion of organisations/clinicians/ patients having)</td>
<td>x</td>
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<td>Information/functionality availability</td>
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<td>Intensity of use (proportion of transactions performed)</td>
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<td>IT support quality (proportion of clinicians experiencing)</td>
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<td>IT system quality (e.g. reliability, down-time)</td>
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<td>System integration/ interoperability/ info sharing</td>
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<td>Information quality (proportion of clinicians experiencing)</td>
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<td>Usability (proportion of clinicians experiencing)</td>
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<td>IT costs (investment/ maintenance budget)</td>
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<td>Benefits (general) (proportion of clinicians experiencing)</td>
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<td>professional development support</td>
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<td>Productivity/ efficiency gains (e.g. avoidance of duplicate tests)</td>
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<td>Support for collaboration/ care continuity</td>
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<td>Patient safety (several variables)</td>
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<td>Patient centredness</td>
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<tr>
<td>Challenges/ most successful functionalities</td>
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</table>
Second report:

Nordic eHealth Benchmarking
Status 2014

Hannele Hyppönen, Maarit Kangas, Jarmo Reponen, Christian Nøhr, Sidsel Villumsen, Sabine Koch, Gudrun Audur Hardardottir, Heidi Gilstad, Lars Jerlvall, Thomas Pehrsson, Arild Faxvaag, Hege Andreassen, Berit Brattheim, Vivian Vimarlund and Johanna Kaipio

TemaNord 2015:539

http://dx.doi.org/10.6027/TN2015-539

The current report presents benchmarking results of **altogether 49 eHealth indicators** from the Nordic Countries in 2014, to the extent that data are available at least from two different countries.
Figure 2. Proportion (%) of public organisations where detailed clinical notes outside own organization are available for professionals

*Total calculated as an average from P and S.


Nordic eHealth Benchmarking
Status 2014 – HIE services for professionals
Nordic eHealth Benchmarking
Status 2014 – HIE services for professionals

Figure 6. Proportion (%) of public organizations where laboratory results from outside own organization are available for professionals

*Total calculated as an average from P and S.

Source: Hyppönen H, Kangas M, Reponen J et al
http://dx.doi.org/10.6027/TN2015-539
Figure 8. Proportion (%) of public organisations where imaging results outside own organization are available for professionals

*Total calculated as an average from P and S.

Source: Hyppönen H, Kangas M, Reponen J et al
http://dx.doi.org/10.6027/TN2015-539
Figure 15. Proportion (%) of public organisations where sending a prescription to be dispensed in any pharmacy is available for professionals

Nordic eHealth readiness index: Health Information Exchange (HIE) availability per functionality/country in 2014

Source: Hyppönen H, Kangas M, Reponen J et al
http://dx.doi.org/10.6027/TN2015-539
Figure 17. Proportion (%) of public organisations making their prescriptions available to the patient in electronic format

Nordic eHealth Benchmarking
Status 2014 – services for citizens

Figure 19. No. of prescription viewings by patients (in or via a national database or system)/electronic prescriptions made per year

Source: Hyppönen H, Kangas M, Reponen J et al
http://dx.doi.org/10.6027/TN2015-539
Nordic eHealth Benchmarking
Status 2014 – services for citizens

Figure 20. Proportion (%) of public organisations where electronic prescription renewal is available for patients

*Total calculated as an average from P and S.

Source: Hyppönen H, Kangas M, Reponen J et al
http://dx.doi.org/10.6027/TN2015-539
Figure 21. No. of electronic renewal requests made by patients/population of the country

Nordic eHealth Benchmarking
Status 2014 – services for citizens

Figure 22. Proportion (%) of public organisations where online booking of an appointment is available for citizens

*Total calculated as an average from P and S.

Source: Hyppönen H, Kangas M, Reponen J et al
http://dx.doi.org/10.6027/TN2015-539
Figure 23. Proportion of electronic primary care bookings made by patients of all primary care visits per year

Source: Hyppönen H, Kangas M, Reponen J et al
http://dx.doi.org/10.6027/TN2015-539
In Finland 2014, 19.8% of public primary health care organizations and 28.6% of public secondary health care organizations had a system for patient provided data to be seen by health professionals. No detailed data was available from other Nordic countries.

Source: Hyppönen H, Kangas M, Reponen J et al
http://dx.doi.org/10.6027/TN2015-539
Nordic eHealth Benchmarking
Status 2014 – services for citizens

Figure 25. Proportion (%) of public organisations where asynchronous communication between patients and professionals is available

Source: Hyppönen H, Kangas M, Reponen J et al
http://dx.doi.org/10.6027/TN2015-539
Nordic eHealth Benchmarking
Status 2014 – services for citizens

Source: Hyppönen H, Kangas M, Reponen J et al
http://dx.doi.org/10.6027/TN2015-539
Nordic eHealth Benchmarking Status 2014 – services for citizens

Figure 51. eHealth readiness PHR: availability per country and functionality

Nordic eHealth Benchmarking Status 2014 – User Experience /professionals

Figure 31. Mean overall satisfaction with the information system (scale 1–5)

*Total calculated as average of P+S.

Nordic eHealth Benchmarking Status 2014 – User Experience /professionals

Figure 32. Mean experienced satisfaction with system reliability (scale 1–5)

*Total calculated as average of P+S.

Nordic eHealth Benchmarking
Status 2014 – User Experience /professionals

Figure 33. Mean experienced satisfaction with response time (scale 1–5)

*Total calculated as average of P+S.

Source: Hyppönen H, Kangas M, Reponen J et al
http://dx.doi.org/10.6027/TN2015-539
Figure 39. Mean experienced Support from IS for collaboration between doctors working in different organizations (scale 1-5)


*Total calculated as average of P+S.
Nordic eHealth Benchmarking
Status 2014 – User Experience /professionals

Figure 54. eHealth intensity: eHealth usability per variable

Source: Hyppönen H, Kangas M, Reponen J et al
http://dx.doi.org/10.6027/TN2015-539
Similarities and Dissimilarities

- Public funding of health care (taxation)
- Regions that have responsibility to give care.
- Harmonization of education and clinical practise already before EU
- High degree of ICT usage
- National implementation of eHealth services
- National bodies for eHealth development

- Organisation of primary care has been different:
  - (Sweden+Finland vs Denmark+Norway)
  - The position of public and private providers
  - Different initial priorities when building the eHealth infrastructure
  - The exact content of the service can vary.
Discussion: Possible Nordic collaboration

• Nordic countries, which are amongst the five tops in health care digitalization, could have joint efforts in eHealth standardization.

• NMT= Nordic Mobile Telephone
  NMT= Nordic Medical Technology standardization

• This could create a larger "eHealth platform", which motivates software vendors to create products to this portal.

• Also Nordic countries are forerunner laboratories to show, which portal / web services are beneficial for patients/citizens and health delivery.
Thank you for your attention!

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Twitter: @reponenjarmo