Improving the health care system with eHealth – the Swedish case

SNOMED CT Implementation Showcase 2012
Henrik Moberg
Ministry of Health and Welfare
Outline...

- Healthcare in Sweden - an overview
- eHealth supporting the Patient and Citizen
- eHealth supporting Health Professionals and Decision Makers
- The Swedish approach to semantic interoperability in health and social care
The democratic system in Sweden

National level
- Elections to the Riksdag (Swedish parliament)
- The Riksdag elects the Prime Minister, who forms a government

Regional level
- Elections to the County Council Assembly
- The County Council Assembly elects the Municipal Executive Board
- The County Council Executive Board

Local level
- Elections to the Municipal Council
- The Municipal Council elects the

21 Counties
290 Municipalities
# Healthcare Services in Sweden

## Three political and administrative levels:

<table>
<thead>
<tr>
<th>State, National</th>
<th>Regional, County Councils (21)</th>
<th>Local authorities (290) (municipalities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Health and Social Affairs</td>
<td>Responsible for organising, financing and providing health care services to all residents. Impose taxes</td>
<td>Responsible for care of elderly and disabled. Support for people suffering from long-term mental illness. Impose taxes</td>
</tr>
<tr>
<td>Central government agencies / Authorities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Legislation
- Supervision
- Evaluation, follow-up (Financing)
General challenges for our health care

- Empowering the patient
- Managing geographical and socioeconomic inequities in health
- Improving patient safety
- Shorter waiting times and better access
- Managing a new disease panorama, pandemics, resistant bacteria, lifestyle diseases
- Further developing IT-services to support healthcare
- Population group over 65 will increase with 28% before year 2020.
- Healthcare expenditure is expected to increase by 20% before year 2030.
Future cost reduction potentials

- If we manage to reduce the incidence of high blood pressure we could save almost half a billion EUR every year.

- If we could delay the development of Alzheimer’s disease with five years we could save 1.4 billion EUR yearly.

- If we could avoid medical injuries, reduce accidental falls and reduce hospital infections we could save an additional 1.5 billion EUR yearly.

- If all County Councils were as efficient and productive as the most efficient county council we could save around one billion EUR yearly.
Doctors use Electronic Patient Medical Records (2009)

Source: Commonwealth, International Health Policy Survey of Primary Care Physicians
## Practice Use of IT on a Routine Basis for Core Tasks (2009)

<table>
<thead>
<tr>
<th>Percent reporting ROUTINE:</th>
<th>AUS</th>
<th>CAN</th>
<th>FR</th>
<th>GER</th>
<th>ITA</th>
<th>NET</th>
<th>NZ</th>
<th>NOR</th>
<th>SWE</th>
<th>UK</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic ordering of laboratory tests</td>
<td>86</td>
<td>18</td>
<td>40</td>
<td>62</td>
<td>91</td>
<td>6</td>
<td>64</td>
<td>45</td>
<td>81</td>
<td>35</td>
<td>38</td>
</tr>
<tr>
<td>Electronic access to patients’ test results</td>
<td>93</td>
<td>41</td>
<td>36</td>
<td>80</td>
<td>50</td>
<td>76</td>
<td>92</td>
<td>94</td>
<td>91</td>
<td>89</td>
<td>59</td>
</tr>
<tr>
<td>Electronic prescribing of medication</td>
<td>93</td>
<td>27</td>
<td>57</td>
<td>60</td>
<td>90</td>
<td>98</td>
<td>94</td>
<td>41</td>
<td>93</td>
<td>89</td>
<td>40</td>
</tr>
<tr>
<td>Electronic alerts/ prompts about a potential problem with drug dose/interaction</td>
<td>92</td>
<td>20</td>
<td>43</td>
<td>24</td>
<td>74</td>
<td>95</td>
<td>90</td>
<td>10</td>
<td>58</td>
<td>93</td>
<td>37</td>
</tr>
<tr>
<td>Electronic entry of clinical notes</td>
<td>92</td>
<td>30</td>
<td>60</td>
<td>59</td>
<td>82</td>
<td>96</td>
<td>96</td>
<td>81</td>
<td>89</td>
<td>97</td>
<td>42</td>
</tr>
</tbody>
</table>

Source: Commonwealth, International Health Policy Survey of Primary Care Physicians
Number of employees per computer

Source: “eHealth in Swedish County Councils 2012” Jervall & Pehrsson
eHealth for a Healthier Europe!
– opportunities for a better use of healthcare resources

http://www.sweden.gov.se/sb/d/574/a/129815
Documented benefits of eHealth technologies - examples:

- 10% reduction in hospital acquired infections
- 17% reduction in adverse drug events
- 41% reduction in drug interaction errors
- 52% rise in patients with documented self management goals
- 7.0% reduction in average length of stay in hospital
- 48% reduction in duplicate laboratory/chemistry tests
- 19% reduction in hospital admissions for chronic conditions
- 83% reduction in medication errors due to mistaken identity.
Gartner found that eHealth contributes significantly to the following political goals:

- Patient Safety
- Quality of Care
- Availability
- Empowerment of the patient
- Continuity of Care
Sweden’s National Strategy for eHealth (2010)

- The National Strategy for eHealth aims to:
  - improve patient safety, accessibility and quality of care;
  - enable patient mobility nationally and internationally;
  - meet the increasing demands from citizens and healthcare professionals for modern healthcare;
  - encourage healthcare politicians and decision makers to use eHealth as the main tool for renewal and improvement of the healthcare sector.

- Three target groups: Citizens, Health Professionals and Policy Makers at all levels.
Defining a common agenda for all stakeholders in healthcare

Six Action Areas identified:

1. Bringing laws and regulations into line with an increased use of ICT.
2. Information structure and terminology.
3. Enhance the technical infrastructure.
4. Facilitating interoperable, supportive ICT systems.
5. Facilitating access to information across organisational boundaries.
eHealth for the Patient and the Citizen
1177: Råd om vård dygnet runt

Just nu Stockholms län | Näthandel med förfalskade läkemedel ökar

Från röksug till rökfrifullhet

Vill du sluta röka? Vårdguidens tjänst Rökfrifullhet är där att hjälpa dig! 

Bor du i Stockholm?

På Vårdguiden se kan du läsa om vård och hälsa i Stockholm, Stockholms läns landsting.

Temasidor

Gravid
Barn och föräldrar
Cancer
Kroppen
Liv och hälsa
About UMO (engelska)

» Translate UMO into English

UMO is a national web-based youth friendly clinic for young people aged 13 to 25 years. The purpose of the site is to make it easier for young people to find relevant, current and quality assured information about sex, health and relationships.

UMO is dedicated to increase and enhance empowerment and equality in young people’s lives. UMO aims to provide information and possibilities of reflection through which young people can influence their own lives – at home, in relationships, in school or at work. UMO believes that by knowing one’s legal rights and obligations, one is better equipped to make initiated decisions.

UMO is embodied by an inclusive perspective and aims to make every visitor feel welcome and included. Supressing norms are questioned, discussed and debated. Big effort is also put into maintaining and improving the user-friendliness and accessibility of the site. For this purpose, UMO has its own web accessibility expert.

UMO has been developed by Inera, which also operates the site 1177.se, the only national site with information about health and medical care available to the public. The development of UMO has been financed by the Ministry of Integration.
Personal Health Record for Citizens

- National infrastructure for secure storage of personal health data and applications

- Initial services: Medication List, Immunization Cards, maternity care, information from the medical record

- Generic interface and business rules for commercial application vendors and public service providers

- A procurement process – first version of PHR published in 2013
A Swedish PHR platform

Health care information

Administration of account and privacy settings

Lifelong storage of information

Applications and devices connected to the platform
eHealth for Health Professionals and Decision Makers
National Patient Summary

- Gives authorized care staff access to critical patient information across organizational boundaries
- Accessed through a web interface
- Read only access to the information
- Contains 10 information volumes in the first version
- Running in production since May 2009
- All 21 County Councils connected by 2012
Quality Registers, Public Reporting & Benchmarking

Quality and Efficiency in Swedish Health Care
Regional Comparisons 2010

Ministry of Health and Social Affairs Sweden
National projects

- The national information structure
  - generic description of the health and social care process and the stakeholders’ information needs in this process
  - how information should be structured so that it can be reused in different parts of the process, while its context is maintained.

- The interdisciplinary terminology
  - concepts and terms that have been agreed on a national basis, statistical classifications and coding systems that have been agreed on a national and international basis and the Swedish translation of the clinical terminology SNOMED CT.
A new infrastructure agency for health care

- A proposal from the government which has been sent for referral

- Reconstruction of Apotekens Service AB: responsible of the infrastructure and service systems in the pharmacy market. The systems concerned are e.g. the pharmaceutical registry, the prescription registry and the annual health care fee limit database.

- Expansion of the remits of the agency compared to Apotekens Service AB?

- The new agency in place 1/1 2014
SNOMED CT in a Swedish context
Sweden and the IHTSDO

- Sweden is a Charter Member of the IHTSDO
- In the IHTSDO Sweden is represented …
  - Formally by the Ministry of Health and Social Affairs
  - Operationally by the National Board of Health & Welfare
  - Swedish representatives actively participate in IHTSDO governance bodies
- Swedish experts participate regularly in IHTSDO advisory bodies and special interest groups
Swedish National Release Centre

- Managed by the Swedish National Board of Health and Welfare
- Develops and maintains content specific to Sweden:
  - Swedish translation of SNOMED CT (290,000 descriptions)
  - Swedish extension of added concepts (200 concepts)
- Distributes SNOMED CT to Swedish affiliates
  - 150 affiliates (Swedish regions, IT suppliers and research institutions)
- Supports development and implementation projects in Sweden
Some national activities

- Coding of reason for prescription
  - Government commission 2012 to develop a national coding system
  - SNOMED CT will be used to code clinical findings to indicate the reasons for each prescription

- New national register for medical substances
  - SNOMED CT one of several coding systems included

- New national vaccination register
  - Likely to make use of SNOMED CT
Some regional/local activities

- Quality register uses of SNOMED CT
  - Heart failure (IFK-2): pilot use in 3 hospitals
  - Plans to implement SNOMED CT in other quality registers (NPDI)

- Surveillance of antibiotic use and resistance in hospitals
  - Using SNOMED CT in pilot sites for:
    - Clinical findings as reason for use of antibiotics (e.g. UTI)
    - Organisms
  - Planned wider use

- SNOMED CT used in local EHR system
  - Structured documentation forms for family planning (in use)
International activities - epSOS

- Large Scale Pilot funded by European Commission and participating nations
- Project start in 2008 with 12 participating nations and industry team
- Extension and expansion in 2011-2013. Currently 23 participating nations
- Pilot operation in live mode 2012-2013
International activities - epSOS scope

- Concrete cross border services that ensure safe, secure and efficient medical treatment for citizens when travelling across Europe

- Focus on services close to the patient:
  - Patient summary
  - e-prescription and e-dispensation

- Build on existing National eHealth Projects and use experiences and knowledge from all Member States
What the project has achieved so far

- Live Pilots: epSOS services are available in five countries
- Agreement on a minimum data set and requirements for patient summary and e-prescription
- Agreement on a minimum set of requirements for access to information, including citizens, health professionals and health care providers
- Agreement on a legal framework regulating the exchange of data
- Agreement on model for semantic interoperability based on existing standards
EU-US cooperation on eHealth

- EU and US recognise the importance of health-related ICTs
- Wish to strengthen their relationship and support global cooperation in this area
- An MoU (signed in Dec 2010) aims to foster a mutual understanding of the common challenges
Scope of memorandum of understanding

- Common standards and interoperability stand to create huge growth opportunities for the eHealth industry as well as having a positive impact on the safety and quality of care.

- Create new markets and growth opportunities for industry in the eHealth sector in both the EU and the US.

- Aims to boost the potential of the eHealth market for EU companies wishing to do business in the US and vice versa.

- The Memorandum stresses the need for a joint vision on internationally recognised and utilised interoperability standards for electronic health record systems.
What can we learn from Vasa?

Why the Vasa sunk

- Lack of technical specifications
- Lack of scientific methods
- Results of the stability tests were known to some but not communicated to others
- Excessive schedule pressure
Thank you and good luck!