



Improving the health care system with eHealth - the Swedish case

SNOMED CT Implementation Showcase 2012
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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

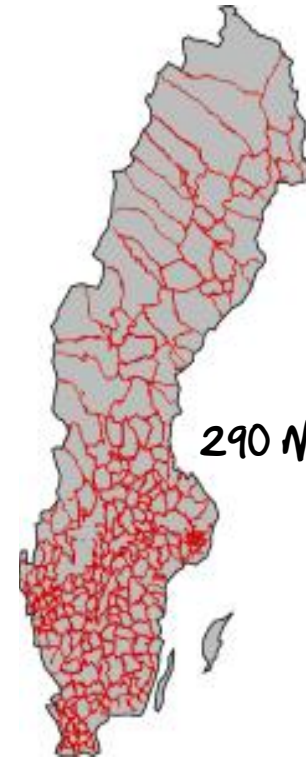
- Elections to the County Council Assembly
- The County Council Assembly elects the County Council Executive Board



21 Countys

Local level

- Elections to the Municipal Council
- The Municipal Council elects the Municipal Executive Board



290 Municipalities

Healthcare Services in Sweden

Three political and administrative levels:

State, National

Ministry of Health and Social Affairs

Central government agencies / Authorities

Legislation

Supervision

Evaluation, follow-up

(Financing)

Regional, County Councils (21)

Responsible for organising, financing and providing health care services to all residents. Impose taxes

Local authorities (290)

(municipalities)

Responsible for care of elderly and disabled. Support for people suffering from long-term mental illness. Impose taxes

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.

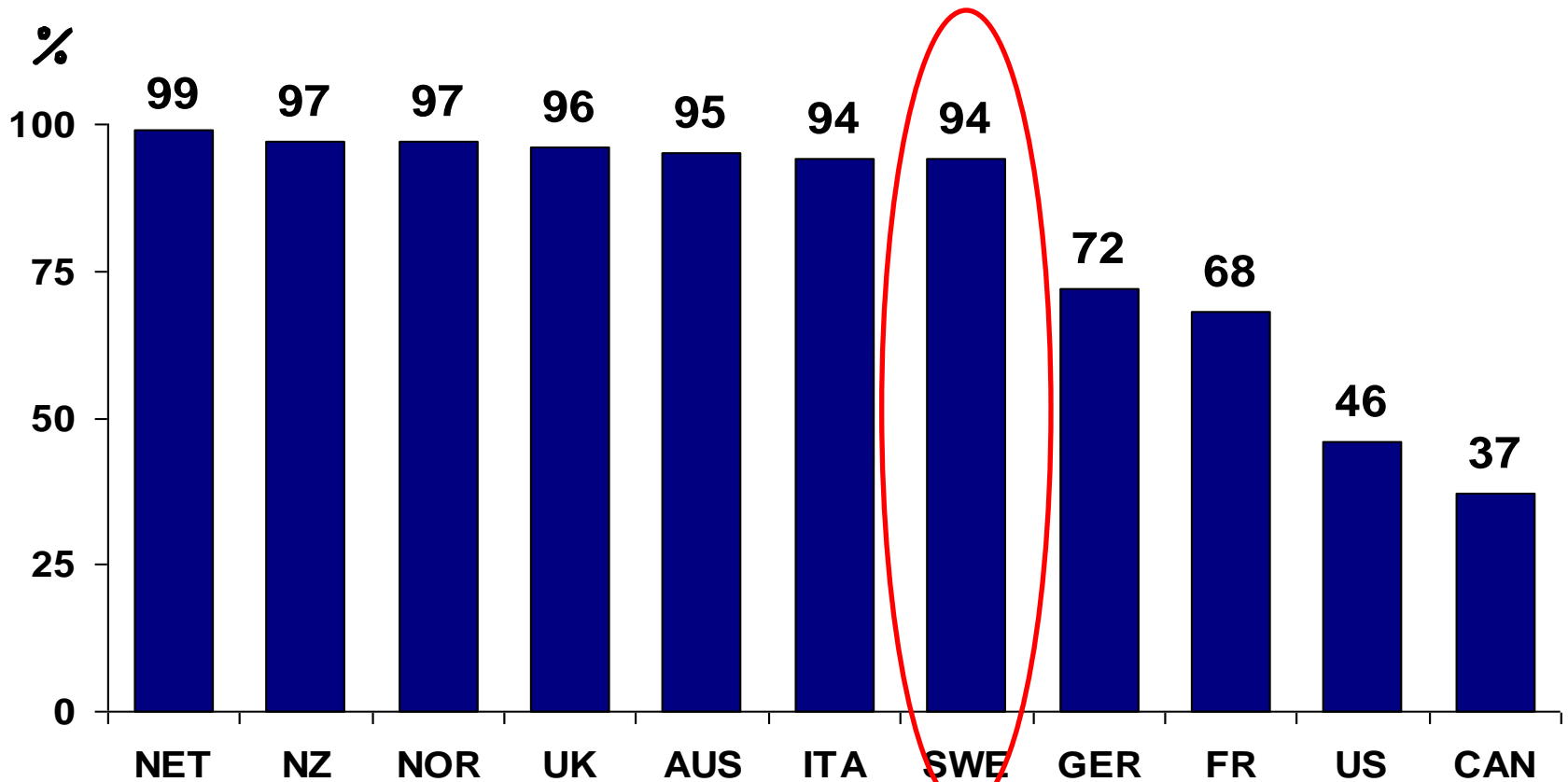
Future cost reduction potential



- 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 where as efficient and productive as the most efficient county council we could save around one billion EUR yearly.

LEV report, MoH 2010

Doctors use Electronic Patient Medical Records (2009)



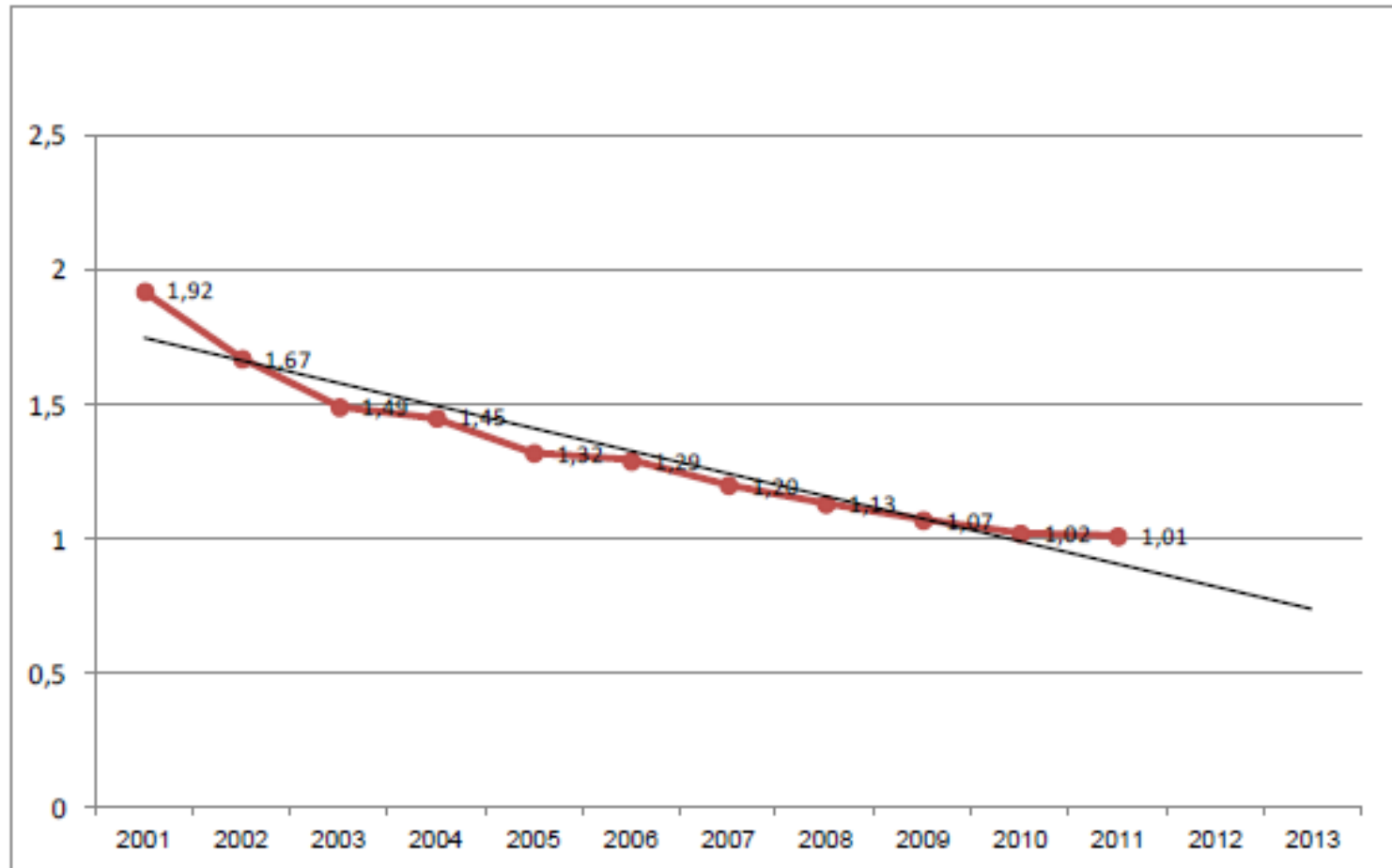
Source: Commonwealth, International Health Policy Survey of Primary Care Physicians

Practice Use of IT on a Routine Basis for Core Tasks (2009)

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

Source: Commonwealth, International Health Policy Survey of Primary Care Physicians

Number of employees per computer



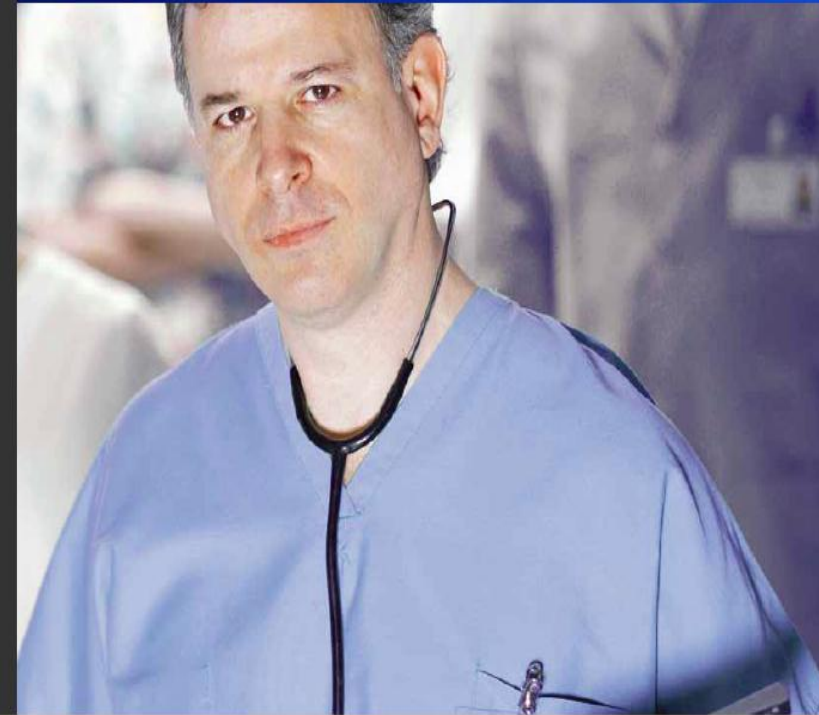
Source: "eHealth in Swedish County Councils 2012" Jervall & Pehrsson



se2009.eu

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.

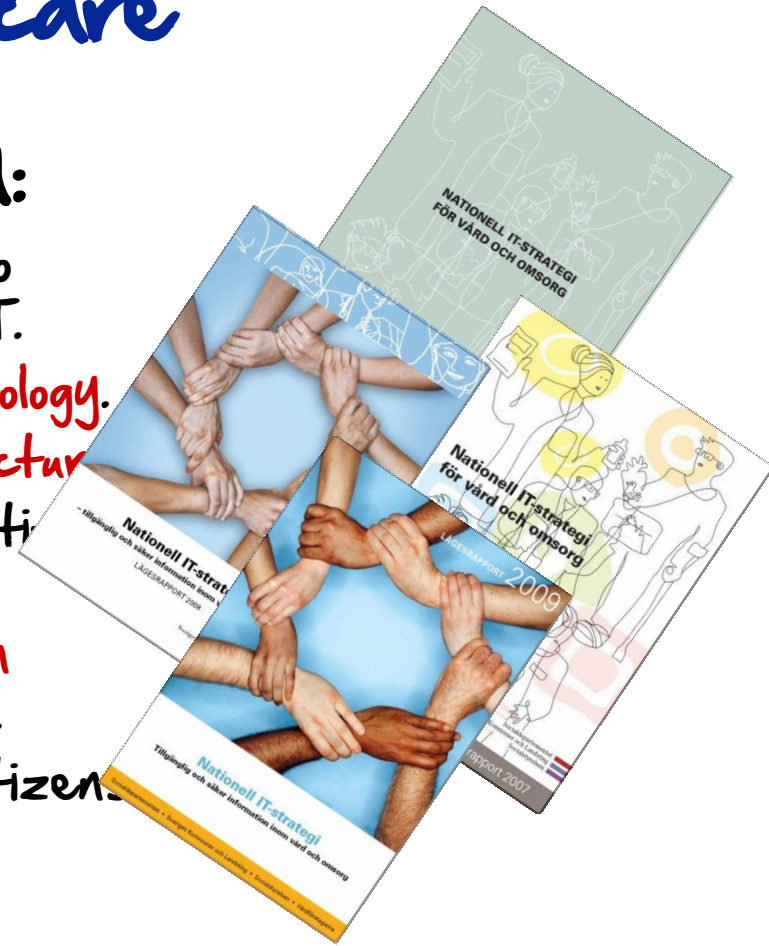
Defining a common agenda for all stakeholders in healthcare

Six Action Areas identified:

National government

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**, supporting ICT systems.
5. Facilitating **access to information** across organisational boundaries.
6. Launching new **e-services** for citizens.

Health care regions



PATIENT EMPOWERMENT

- Personal e-services for all citizens
- Interactive services for patient participation
- Web based support for free choice of care provider

INFRASTRUCTURE

Laws and Regulations
Information Structure
Technical Infrastructure

Support for HEALTH PROFESSIONALS

- Decision support Systems
- Structured Documentation
- User friendly EHR systems
- Patient Summary Service
- Alert information
- Education and eLearning

Support for POLICY MAKERS

- Open comparisons of quality and outcomes
- Development of Quality Registries
- Follow-up and monitoring

eHealth for the Patient and the Citizen

STARTSIDA

FAKTA OCH RÅD ▾

REGLER OCH RÄTTIGHETER ▾

TEMASIDOR ▾

HITTA OCH JÄMFÖR VÅRD



1177: Råd om vård dygnet runt

Jag vill hitta mottagning i Stockholms län
[Vårdcentral](#) →
[Barnvårdcentral](#) →
[Fler mottagningar](#) →

Jag vill läsa om ett besvär eller en sjukdom



Jag vill ställa en anonym fråga till 1177.se



Kontakta vården och logga in via [Mina vårdkontakter](#)



Just nu Stockholms län | Näthandel med förfalskade läkemedel ökar



Från röksug till rökfri»

Vill du sluta röka? Vårdguidens tjänst Rökfri



Bor du i Stockholm?»

På [Vårdguiden.se](#) kan du läsa om vård och

Temasidor

[Alla temasidor »](#)
[Gravid »](#)
[Barn och föräldrar »](#)
[Cancer »](#)
[Kroppen »](#)
[Liv och hälsa »](#)

Om UMO

Vi på UMO

Använda UMO

Så har vi arbetat ▶

UMO på Facebook ▶

Informationsmaterial ▶

Evenemang ▶

Cookies, kakor

Tillgänglighet ▶

Att dölja ditt besök

Välja ord för kön

UMO på andra språk ▾

(arabiska) UMO عن

About UMO (engelska)

UMOsta (finska)

Au sujet d'UMO (franska)

Start / [UMO på andra språk](#) / [About UMO \(engelska\)](#)

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. Suppressing 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

Hitta en ungdomsmottagning

Skriv in din ort nedan för att hitta din närmaste mottagning

Ange postort

Sök

» [Alla ungdomsmottagningar](#)



Panik - lämna sidan!

Klicka på knappen för att snabbt lämna sidan!

» [Att dölja sitt besök](#)

+ Dela | [f](#) [m](#) [g+](#) [t](#)

Personal Health Record for Citizens

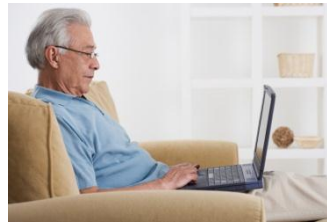
- National infrastructure for secure storage of personal health data and applications
- Initial services: Medication List, Immunization Cards, maternity care, information from the medical record
- Generic interface and business rules for commercial application vendors and public service providers
- A procurement process - first version of PHR published in 2013

A Swedish PRR platform

Health care information



Administration of account
And privacy settings



Applications and devices
connected to the platform



Lifelong storage
of information

eHealth for Health Professionals and Decision Makers

National Patient Summary

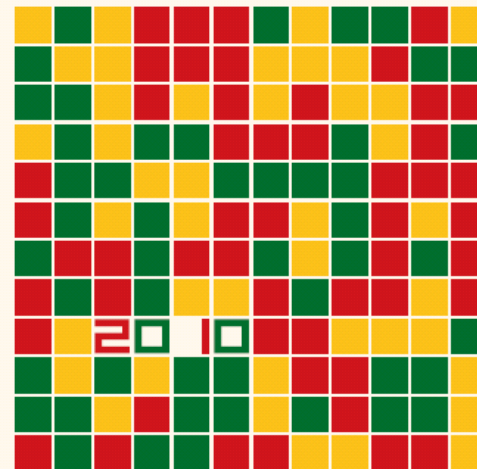


- Gives authorized care staff access to critical patient information across organizational boundaries
- Accessed through a web interface
- Read only access to the information
- Contains 10 information volumes in the first version
- Running in production since may 2009
- All 21 County Councils connected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

Quality Registers, Public Reporting & Benchmarking

Quality and Efficiency in Swedish Health Care

Regional Comparisons
2010



 Swedish Association
of Local Authorities
and Regions

 Socialstyrelsen
THE NATIONAL BOARD OF HEALTH AND WELFARE

Emner

- Akuttmedisin
- Anestesi
- Barn og ungdom
- Blod
- Eldre
- Endokrinologi med diabetes
- Fengselshelse
- Forgiftninger
- Fysio- og ergoterapi
- Gynekologi - obstetikk
- Hjerte og kar
- Hud
- Infeksjon
- Kreft
- Laboratoriemedisin
- Legemidler
- Luftveier
- Mage og tarm
- Nevrologi
- Nyrer og urinveier
- Psykisk helse
- Radiologi og nukleærmedisin
- Samfunnsmedisin og folkehelse
- Sykepleie
- Tannhelse
- Øre-nese-hals
- Øye
-
- Kvalitetsforbedring

GRATIS TIDSSKRIFTER I HELSEBIBLIOTEKET



Tidsskrifter

- ▶ Tidsskrifter A-Å
- ▶ Annals of Internal Medicine
- ▶ BMJ
- ▶ JAMA
- ▶ The Lancet
- ▶ The New England Journal of Medicine
- ▶ Norske/skandinaviske tidsskrifter

REFERANSEDATABASER

Databaser

Søk i databaser for å finne mange artikler.

- ▶ PubMed - fulltekst
- ▶ Lexi-Comp med Martindale
- ▶ Flere databaser - med beskrivelse

VELG EMNEBIBLIOTEK

Emnebibliotek

Emner med egne redaksjoner og mye innhold.

KLINISKE OPPSLAGSVERK

Oppslagsverk

Raske svar på spørsmål i pasientmøtet.

- ▶ BMJ Best Practice
- ▶ UpToDate
- ▶ Norsk Elektronisk Legehåndbok (NEL)
- ▶ Clinical Evidence
- ▶ Felleskatalogen
- ▶ FinnKode (med ICD-10)

VEILEDNINGER OG BEHANDLINGSANBEFALINGER

Retningslinjer

Råd og anbefalinger om diagnostikk og behandling av medisinske tilstander.

- ▶ Guidelines International Network (G-I-N)
- ▶ Flere retningslinjer og veiledere

HVA SIER FORSKNINGEN?

Oppsummert forskning

All forskning om et emne samlet, vurdert og oppsummert.

- ▶ Cochrane Library
- ▶ Flere oppsummeringer

AKTUELT

Ta etter- og videreutdanning på Internett

Logg inn

Logg inn som personlig bruker (gratis):

Brukernavn:

Passord:

Logg inn

- ▶ Ny bruker
- ▶ Glemt passord

Helsebiblioteket.no

- Gratis tilgang til oppdatert fagkunnskap
- Offentlig finansiert nettsted
- Redaksjonelt uavhengig

Helsebiblioteket – nyttig på nett for helsepersonell

 Ansvarlig redaktør:
 Professor dr.med.
 Magne Nylenna

 ▶ **Kontakt oss**

Slik bruker du Helsebiblioteket.no

- ▶ Hjelpeside med søketips

Bibliotekarens tips

- ▶ Effekt av tiltak

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 data base.
- 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 hospital
 - 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 known to some but were not communicated to others~~
- ~~Excessive schedule pressure~~



Thank you and good luck!

