Health Informatics Centre
a collaboration between Stockholm County Council and KI

The role of informatics in supporting new models of care
Health Informatics Centre

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HIC (Health Informatics Centre)
Needs driven research with focus on;
• Clinical decision making
• Integrated, patient-centred information systems for collaborative care
• Supporting patients’ self-care
• Usability

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Agenda

• Home Telehealth
• Developing alternative ways for integrated care
• Changing role of patients and new models of care
• From organisation-centric to patient-centric care – Current state in Sweden
Home telehealth - Driving factors

- Ageing population and related medical implications
- Economic development
- Decentralisation of healthcare
- Societal changes
Emerging technologies

- Smart homes, assistive technologies and robotics
- Health enabling technologies and telecare
- Sensor-enhanced information systems
- Semantic Web
- Games for Health
- Ambient intelligent environments
Center for Future Health

Smart Medical Home-University of Rochester
Knowledge gaps

- Standards for home sensor networks
- Standards for body sensor networks
- Data fusion
- Usability/Acceptance/Safety
- Trust/Security/Policy
- Integration with health information systems
- Impact on e.g. quality of life
Old@Home

http://www.medsci.uu.se/mie/projects/closecare

District nurse at a patient's home
Gets online information!

Patient in his home
Participates and feels safe!

General practitioner
Reads up to date information!

Home helper in action
Reads, writes and communicates!

Relative
Participates and is updated!


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Elderly-centric information system

Context dependent system

Personalised access and group-specific views

Knows patient

Doesn’t know patient

Knows patient

VHR

Scandurra I, Hägglund M, Koch S. Visualisation and interaction design solutions to address specific demands in shared home care. Stud Health Tech Inf 124, 2006,:71-76
From organisation-centric to patient-centric

- Future care models
  - Shift towards integrated care models
  - Shift towards partnership models
    - Family carer as expert
    - Patient as expert

Combination of formal and informal care giving
AND self care AND lifestyle management
  ⇒ locally and at a distance
  ⇒ supported by technology
  ⇒ in partnership with the patient/citizen

⇒ patient-centred care models supported by IT
National eHealth strategies


• Database of European eHealth priorities and strategies
National eHealth strategies

- Main focus points
  - Electronic health record
  - Standardization and interoperability/infrastructure
  - Mobility
  - Regulatory framework, legislation
  - Evaluation and assessment
Swedish National eHealth Strategy

- Improve **patient safety, accessibility and quality of care**

- Enable **patient mobility** nationally and internationally

- Meet the **increasing demands** from citizens and health care professionals

- Encourage politicians and decision-makers to use **eHealth** as the **main tool for renewal and improvement** of health services

Source: Swedish National eHealth Strategy, 2006
IT – an integrated part of Swedish healthcare

- EHR
  - 100% of all documentation in primary care, hospitals, psychiatry is electronic
  - >90% in ambulances (with direct communication to hospitals) (2011)

Source: Jervall L, Pehrsson T. eHealth in Swedish County Councils, 2012
National eHealth Strategy 2010
Do patients benefit from eHealth?
Who is the *patient*?

- E-patient
- Patient as expert
- Chronic disease
- Multiple diagnoses
- Home care
- Elderly
- Acute care
- International
- Administrator
- Coordinator
- Family
- Person/Citizen
- Risk factors
- without diagnosis
- Patient
- without diagnosis

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What is of value for patients?

- Participation
- Empowerment
- Safety
- Timeliness
- Efficiency
- Continuity
- Individualization
- Accessibility
- Communication
- Trust

Final report VIP-PA (Visualising patient-centred process- and business models for e-services in health and social care)
http://ki.se/ki/jsp/polopoly.jsp?d=36739&l=sv
Problems

• Access to and interaction with data when patients are receiving care from different care providers

• Eventually data are linked but services are not integrated

• PHRs mostly represent a snapshot of the providers’ EHRs without redesign!
Vision
• To enable all patients to manage their health as easy as they manage their bank account, their next trip to Sydney etc.
My Care Pathways (2011-2013)

• Visualisation of care pathways:
  – Stroke - Stockholm
  – Lungcancer - Stockholm
  – Hip surgery – Skåne region
  – Heart diseases - Västra Götalands region

• Develop methods and guidelines that describe the process to develop further care pathways and support services
  – In co-production between research, public sector, industry and patient organisations

• Stimulate third parties to develop new products

Financial support: VINNOVA
Project leader: Nina Lundberg, SLL
Research leader: Sabine Koch, KI
Project principles

• Open source
• Reuse
• Use existing standards
• Make use of existing open health data
• Comply with existing regulations
Patient information needs

About care organization
About care processes
About rules & rights
About health & disease
About treatment

General information

Personalized information

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Goals

• To provide secure ways to individuals for combining health care data with other health data

• To find ways to categorize information and to present and interact on it in the context of an individual’s care process

• To provide an open integration platform, a SDK and reusable e-services to the community for development, research and education
Existing e-services

- Appointment scheduling
- Calendar central
- My electronic referrals (waiting for approval)
- Pharmaceutical list (waiting for approval)
Calender central
sdk.minavardkontakter.se
To read more…

…on technology and ageing


- **Koch S, Marschollek M, Wolf KH, Plischke M, Haux R.** On health-enabling and ambient-assistive technologies: What has been achieved and where do we have to go?, Methods Inf Med 2009; 48(1):29-37


- **Koch S.** Healthy ageing supported by technology – a cross-disciplinary research challenge. Inform Health Soc Care. 2010 Sep-Dec;35(3-4):81-91
To read more...

...on collaborative care


To read more...

...on patient-centredness


- **Eghdam A, Scholl J, Bartfai A, Koch S.** Information and Communication Technology to Support Self-management of Patients with Mild Acquired Cognitive Impairments. J Med Internet Res 2012; *accepted*
Questions?

Thanks to Nina Lundberg and Maria Hägglund for parts of the slides!

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