The current status of EPR /EHCR development and the building of a new national archive for patient data in Finland

Presented at the HelsIT pre-conference
Trondheim, Norway

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Structure of the presentation:

- Introduction
- Governmental eHealth policy
- Approach 1: standardization
- Present eHealth status in Finland
- Approach 2: new law of national archive
- Discussion

Introduction: Basics of health care organization in Finland

Public sector covering about 85 % of HC

Specialized health care

- 5 university hospital coverage areas
- 21 hospital districts
  - provided by federations of municipalities
  - about 70 public hospitals

Primary health care

- 251 health care centres
  - provided by municipalities

Private sector covering about 15 % of HC

Basic and specialized health care

Development of Governmental Policies:

- **Finnish national strategy regarding the application of information technology in health-care and welfare 1996**
- **An experimental legislation to exchange patient data 2000**
- **Government Decision Principal 11.4. 2002:**

National Health Care Program: Introducing nationwide EHR by the end of 2007

=> The National EHR project 2002-2007

The National EHR project 2002-2007, approach 1: standards

- Starting point was an uncoherent situation: the regions had already EPR systems, but they could not communicate.
- Ministry of Social Affairs and Health is coordinating the project.
- EHR Strategy was published in 2004.
- Defining core data and other national requirements 2003 – 06.
- State subsidies **to regions 2004 – 07 for EPR, PACS, LAB.**
- Legislation 2007 will give authorities mandate to regulate common structures ->

Already implemented EHR / EPR components in Finland:

1. The project for common structures of the EPR was started in 2003 and is funded by the ministry and lead by the Association of Local and Regional Authorities

2. "The minimum data set" or "core data" was defined in co-operation with different interest-groups (professionals, administration, software-enterprises), finalised and published in 2004.

3. Implementation into existing EPR-systems in pilot organizations is work in progress: 7 regional projects have formed clusters with software enterprises and the work is coordinated by the Association and the ministry. All major vendors are participating.

4. More specifications for certain specialities are worked up on (occupational health care, psychiatry, dental care, child and school health care, nursing, emergency care).

5. Finnish HL7 association has made structures of several main documents, and they have been accepted in several EPR products.

6. The national code server has been providing the main codes since 2004.
   In production are ICD-10 diagnose codes, Nordic codes for surgical procedures, national codes for laboratory tests and x-ray procedures, main HL7 document structures, some statistical codes. In addition a long list of other codes are given out from the code server for testing/piloting.

Where are the regions now?

Roadmap for the progress of eHealth in Finland

Check points 2003, 2005, (2007)

Finnish eHealth Surveys 2003 and 2005

Focus on the implementation of ICT in health care system

Assignment of the Ministry of Social Affairs and Health

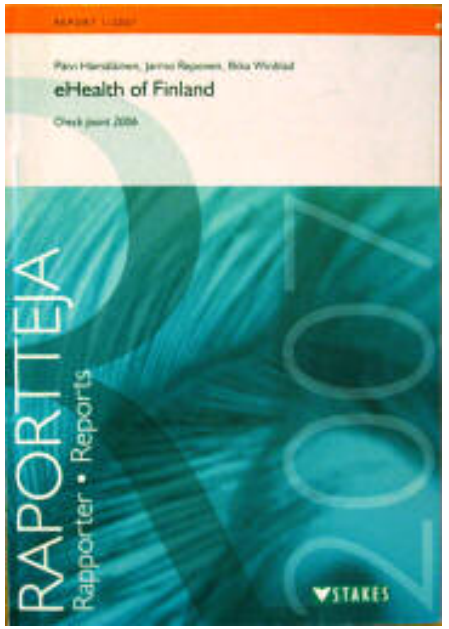
Conducted by FinnTelemedicum and Stakes

Method:
-a structured web based questionnaire

Target:
-all public HC providers, sample of private HC providers,
-all ambulance service providers

Coverage:
-all of the 21 hospitals district for specialized health care
-88 to 100 % population coverage in primary health care

Published sources of the presentation:



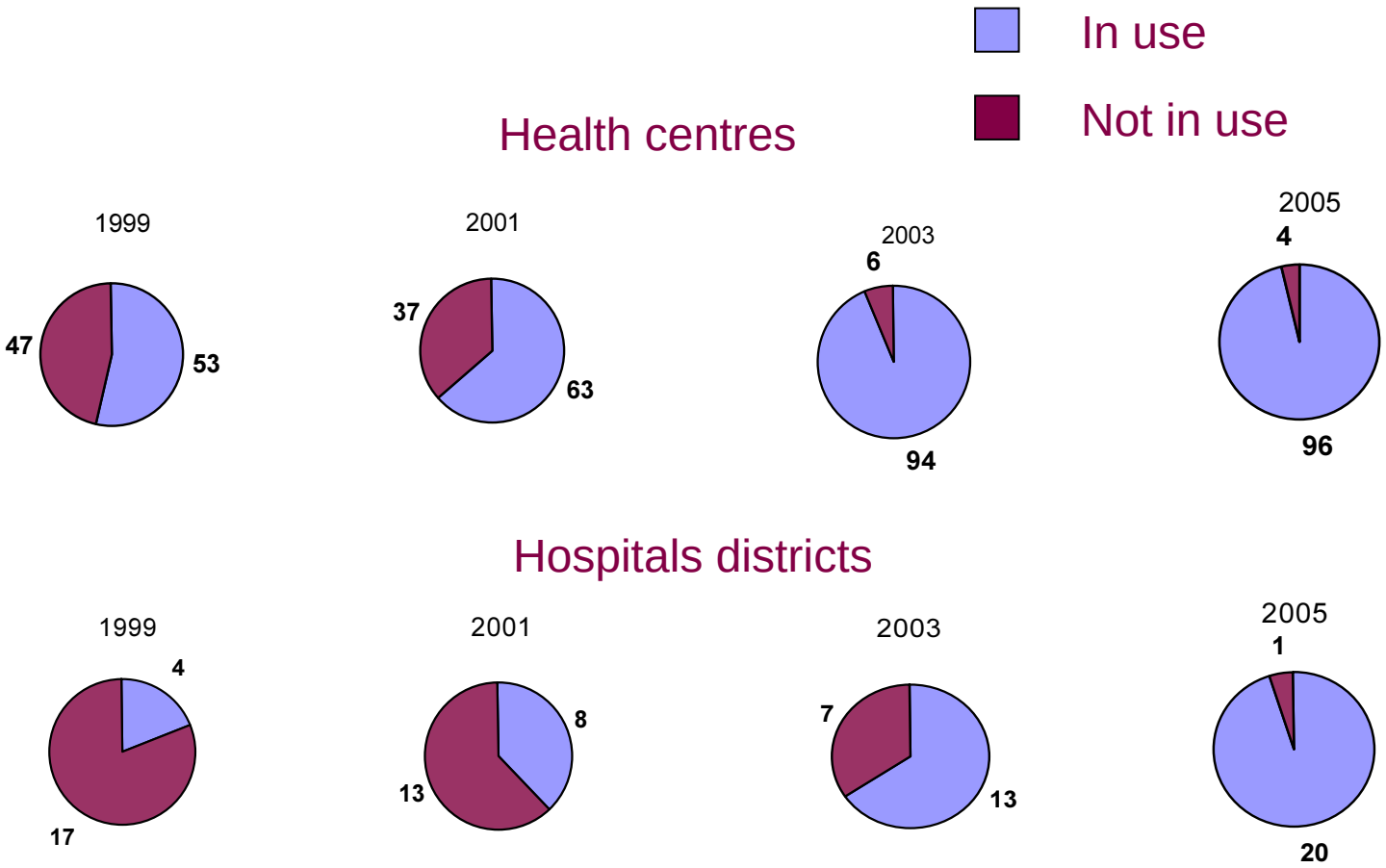
Kiviaho K, Winblad I, Reponen J. Terveydenhuollon toimintaprosesseja ja asiointia tukevat ATK-sovellukset Suomessa. FinnTelemedicum, Osaavien keskusten julkaisuja 8/2004, Helsinki

Winblad I, Reponen J, Hämäläinen P, Kangas M: Informaatio- ja kommunikaatioteknologian käyttö Suomen terveydenhuollossa vuonna 2005. Tilanne ja kehityksen suunta. Raportteja 7/2006, STAKES, Helsinki
www.stakes.fi/verkkojulkaisut/raportit/R7-2006-VERKKO.pdf

-in English:

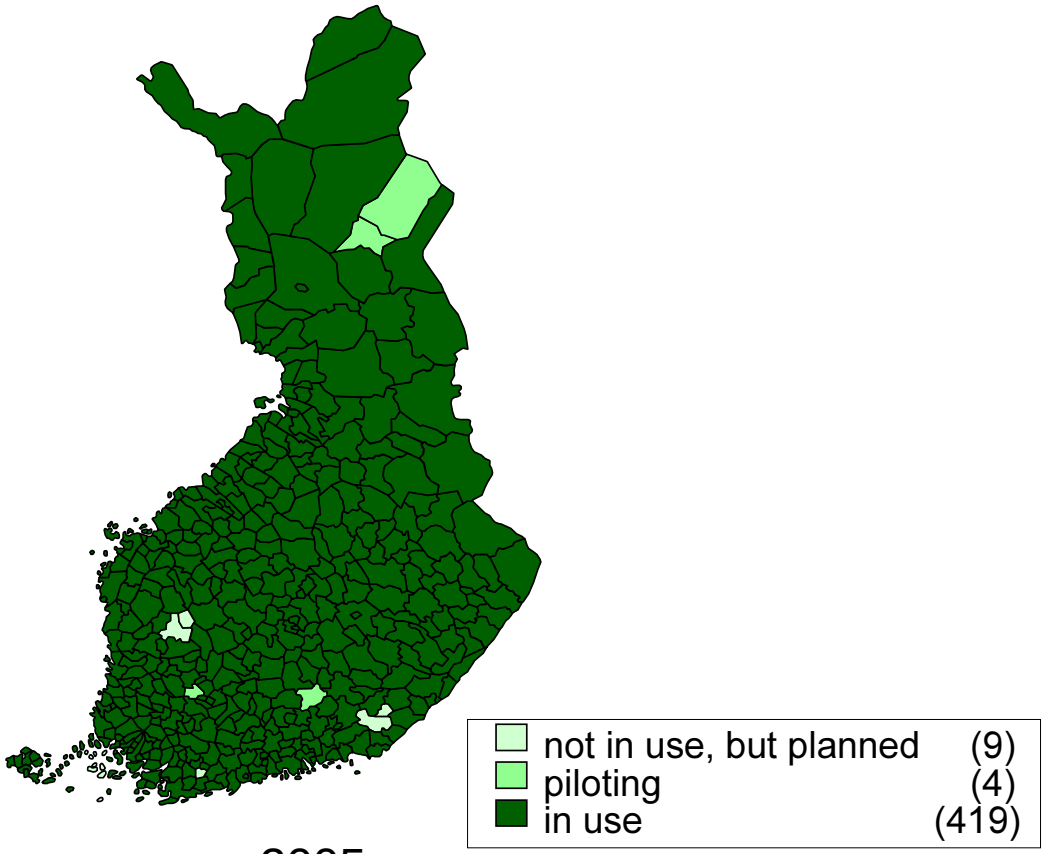
Hämäläinen P, Reponen J, Winblad I. **eHealth of Finland. Check point 2006**. STAKES, Report 1/2007. Helsinki 2007
www.stakes.fi/verkkojulkaisut/raportit/R1-2007-VERKKO.pdf

Implementation EPR in Finland 1999 -2005



Sources: Hartikainen et al 1999, 2002
Kiviaho et al 2004, Winblad et al 2006

EHR in primary health care centres



2005

2005

EHR in 95,6 % of health centres

the main way of recording patient data in 99,4 %

the usage catching the last small units.

2003

EHR in 93,6% of health care centres

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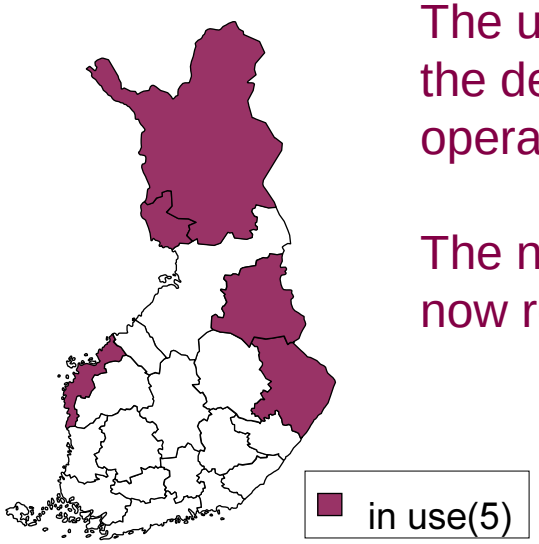
EHR as the main PR system in hospital districts

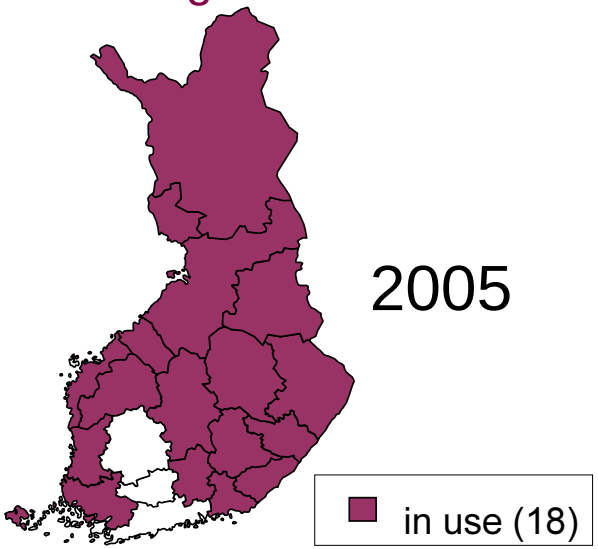
Criteria: usage rate over 50 %, used at least in 3/4 medical responsibility areas in 2003 and 2005**!**

The use of EHR covers evenly the departments of conservative, operative, and psychiatric treatment.

The nationwide infrastructure for digital health care is now ready and functional.



2003



2005

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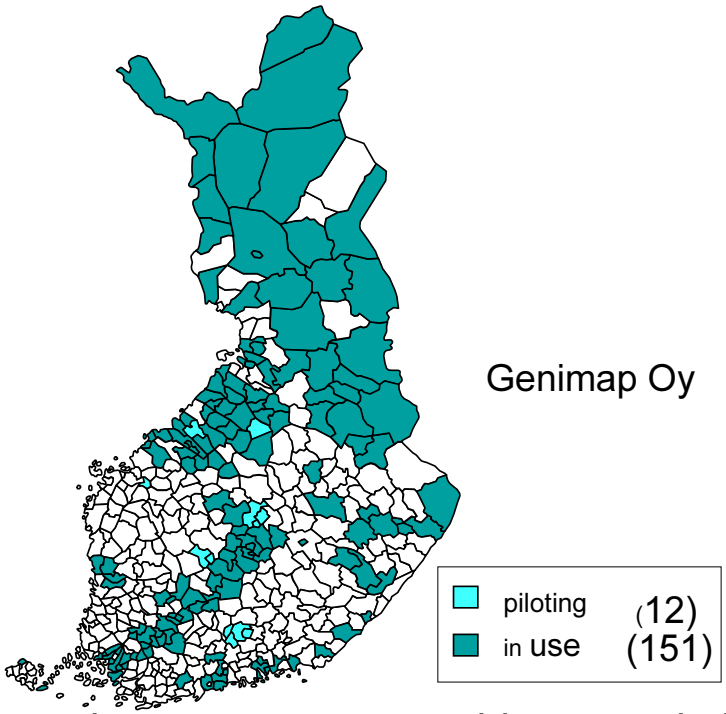
Electronic referral and discharge letters in primary health care centres



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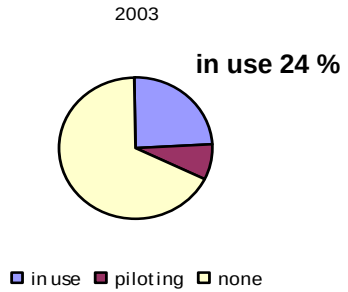
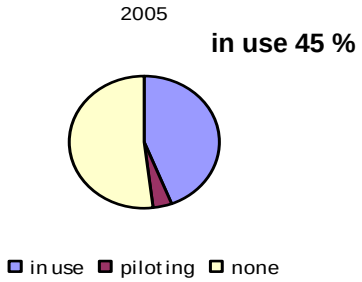
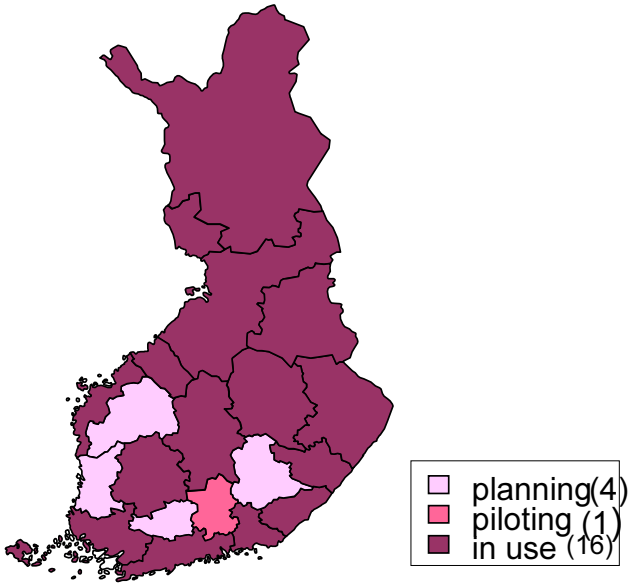


The progress



Primary care centres able to send electronic referrals to specialized care and receive electronic discharge letters in 2005

The ability to accept electronic referrals and deliver electronic discharge letters in hospital districts



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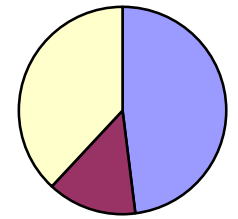
in use 48%

2003

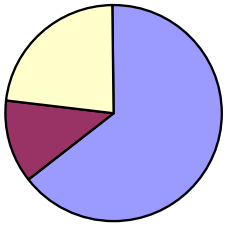


in use piloting none

The progress 2003-2005

2005

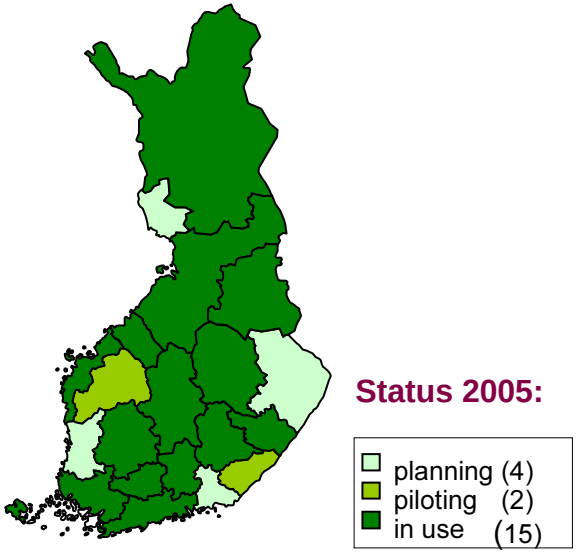
in use 76%



in use piloting none

Results. PACS installations in Finnish hospital districts (n=21) in 2003 and 2005

Measure:	2003	2005
PACS in production phase	12/21	15/21
PACS in pilot phase	4/21	2/21
PACS in installation phase	10/21	4/21
PACS usage > 90% (filmless)	6/21	15/21
PACS usage 50 - 90%	3/21	1/21
PACS usage < 50%	4/21	1/21



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A follow-up telephone survey revealed that districts in planning or piloting phases in 2005 completed filmless operation in 2006-2007.

Results. PACS installations in Finnish primary care

Measure:	2003	2005
PACS or components	17%	53% N=179

- The figures above are only indicative, because most of the primary health care centres do not have a full PACS of there own.
- They have e.g. a joint central PACS services from a nearby local or central hospital.
- Primary care health centres are digitized for image acquisition and display (display via EPR terminals). 96% of primary care health centres are utilizing EPR (paperless).

Results. Regional image distribution / image archive systems in Finnish hospital districts (n=21) in 2003 and 2005

Measure:	2003	2005
Reg. Archive (with PACS) in production phase	3/21	10/21
Reg. Archive in pilot phase	0/21	3/21
Reg. Archive usage > 90%*	0/21	3/21
Reg. Archive usage < 50%	3/21	4/21
Cumulative Results: **		
Image Transfer: Either regional archive or teleradiology service in production	13/21	18/21

* Not all the hospital districts gave answer to the usage question.

** In 2005 two hospital districts did not any more have teleradiology as a separate service, but **included teleradiology within regional archive services from their PACS**!

Governmental EHR approach 2: a mandatory national EPR / EHR archive!

New laws of

1. Electronic archiving
   and
2. Electronic prescription

Government decision 2006; a new legislation in effect since 2007:

- The national digital archive of (life long) patient documents (all the originals to be stored)
- The National Social Insurance Institute (Kela) will provide the archive system
- One connectivity centre and exchange of data via the archive
- Citizens to have access (log+ health data)
- National PKI system for professionals by the National Authority for medico legal Affairs (TEO)
- National code server located physically at Kela, content kept by Stakes

Main points of the national architecture

- All (legal) originals of the electronic patients record **documents** are stored in the new national archive, but are the responsibility of each care provider (not one record/person)
- Public care providers **must join in**. Private providers can choose between the national archive and paper archiving.
- A national **link directory** will show the care provider and the date when care was given.
- Care providers **can use their own** patient record documents without restriction. Documents from another organisation need **a patient consent**.
- **Link directory list** can be seen with oral consent. Patients can **refuse** publishing of their records in the directory. (But all documents are kept in the archive.)

Present status:

- Legislation in effect 1.7. 2007, also for the ePrescription (1.4. 2007)
- System to be built by 2011
- Steering role by the Ministry, close co-operation with Kela, TEO, Stakes
- There is governmental funding for 2007.
- Planning and defining has started; definitions for the eArchive made, a call by Kela was given out in March.
- The vendor that will build the archive was chosen in June. The winning team was a consortium led by Fujitsu. Their work has started.
- A permanent national advisory board was nominated in August.

Other current activities with EPR

From electronic HR to intelligent HR

Decision support systems, EBMeDS

www.kaypahoito.fi (Duodecim)

(20 000 000 articles opened annually)

- patient's status, recent and past history
- clinical quidelines, EBM
- drug interactions, allergy, contraindications, drug resistance
- dosage tayloring
- prioritization scores for surgical operations

So, there are two different evolution steps taking place in Finland:

1. Standardisation/semantic interoperability of EHR structures in all EHR systems
2. Building a new architecture around the national EHR archive – also including direct services to citizens.

Thank you for your attention!

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