



# eHealth Solutions - Finland in eHealth 2005 Congress in Munich

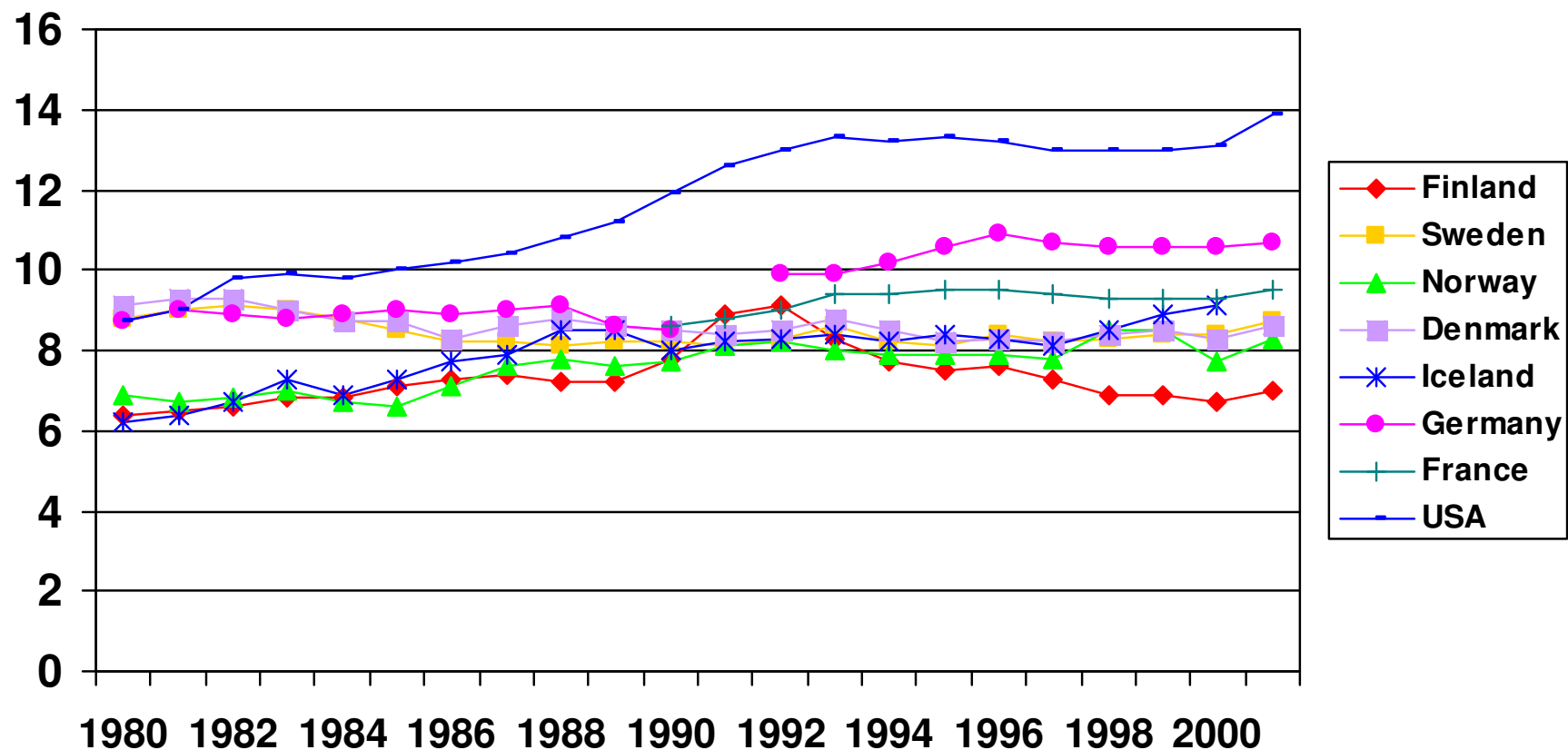
21.4.2005

Hannu Hämäläinen  
Director of Division  
National Research and  
Development Centre for  
Welfare and Health

# Health Care in Nutshell

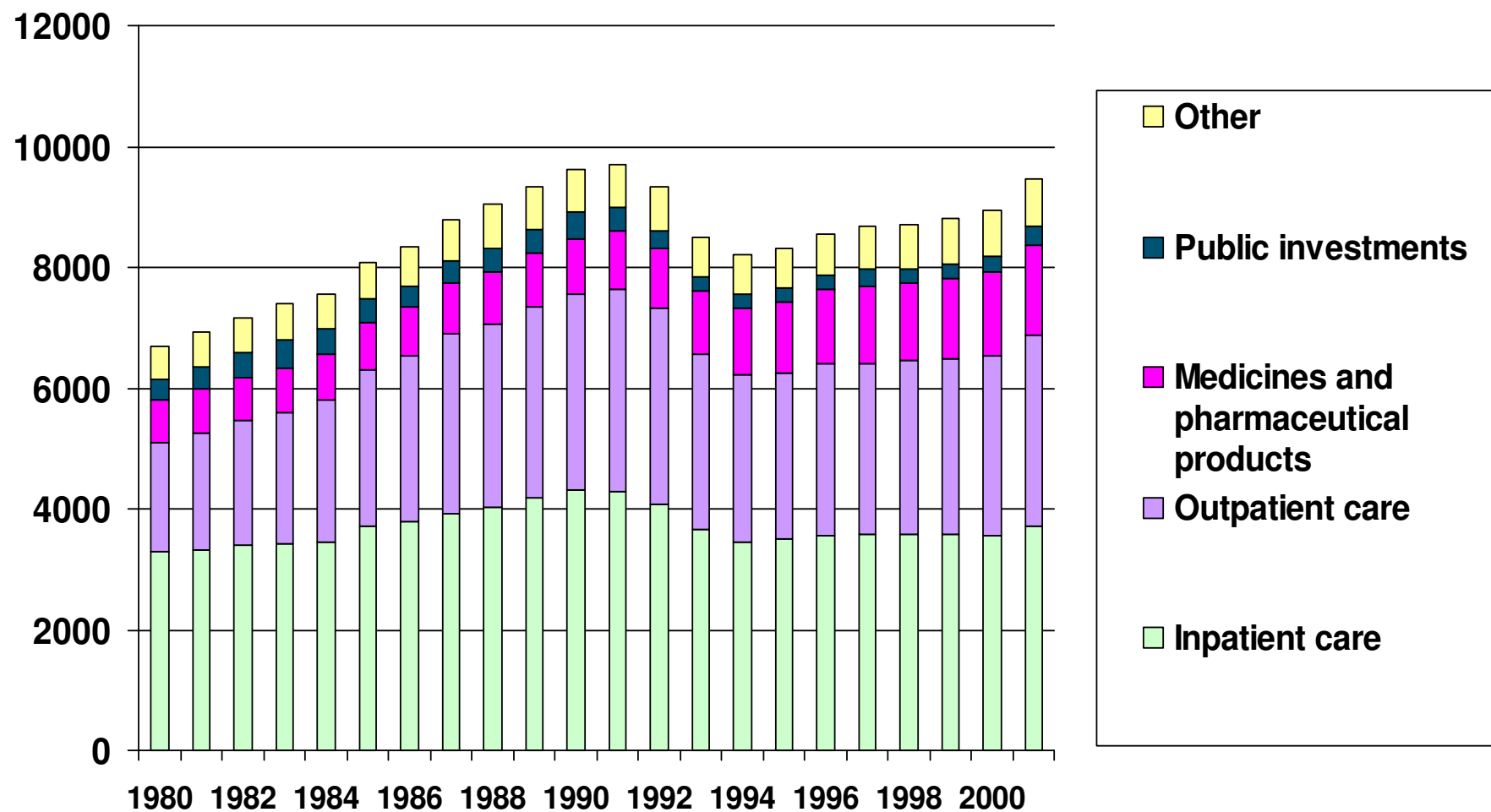
- health care expenditure 7,7 % of GDP
- one of the most decentralised and liberalised health care service systems, 440 municipalities
- primary care by municipalities
- special health care by hospital regions
- welfare mix: public, private and NGO's

## Health care expenditure % of GDP 1980-2001



Source: OECD Health Data 2003

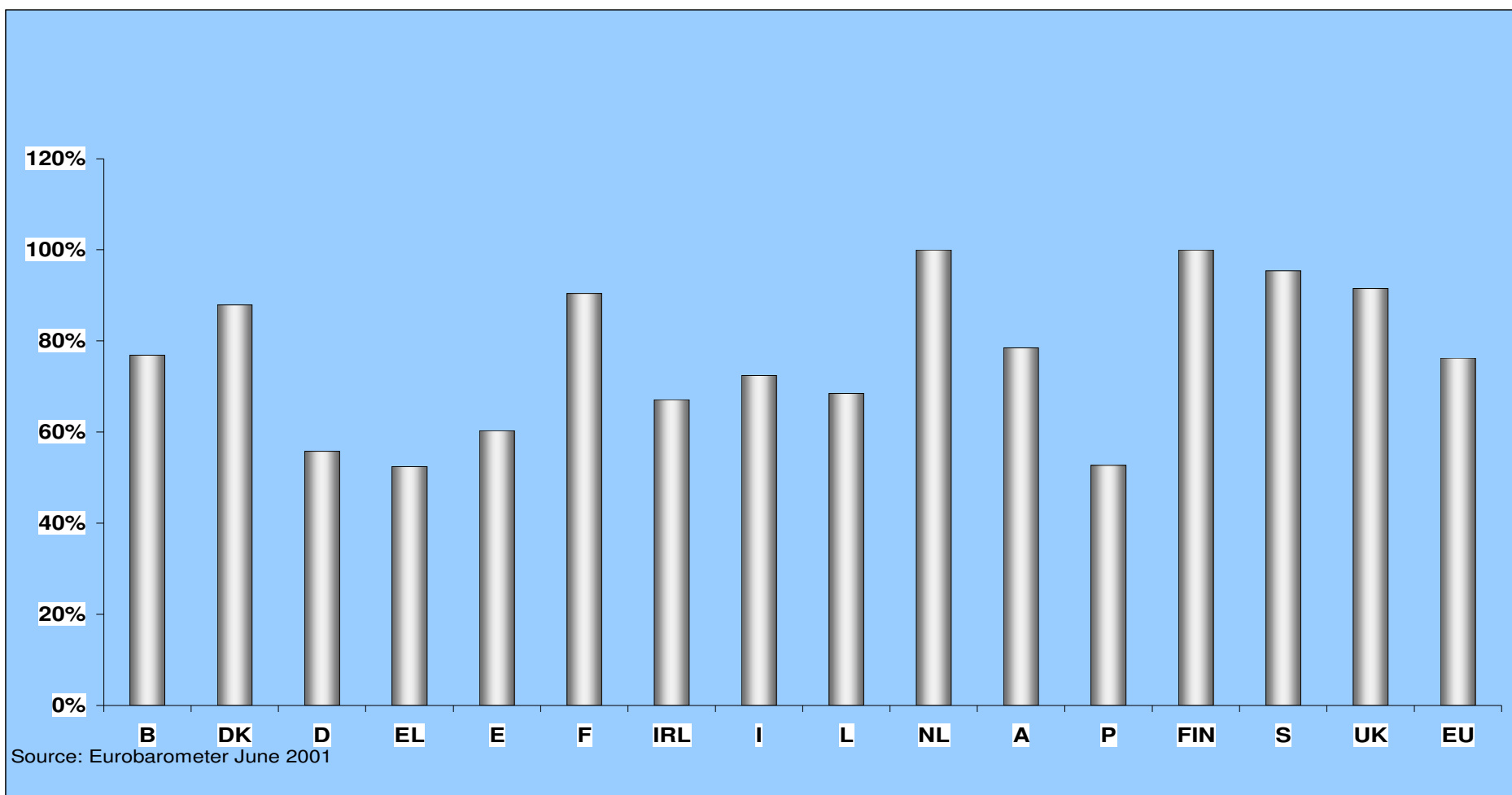
# Health care expenditure 1980-2001, EUR million



## The Markets and Consumers of eHealth are existing and developing

- Citizen B2C - health portals for citizens
- Client - eConsumer B2C - seamless client centred services
- Professional B2B - portals for professionals
- Serviceprovider B2B - processes, networking
- Serviceowner B2B - cost-effectiveness, quality
- new structures and processes for service production and partnerships

## % Medical Practices connected to the Internet June 2001





## Usage of Internet EU Averages

Consult professional databases	73%	
Consult doctor-to-doctor information	70%	
Search clinical cases	57%	
Consult (official) guidelines	50%	
Searching for new drugs	29%	
Receiving analyses results	27%	
Consult alternative treatment sites	23%	
Transfer administrative data	15%	
Transfer patient data	19%	
Interacting with patients	12%	30+%
	Eurobarometer 2000	2001

# Where are we going ...

- National health program
- National social program
- Development of legislation
- Social security card and PKI infrastructure for: clients, professionals, service providers
- Regional networks and reference database systems
- Implementation in regional and local level R&D projects
- Evaluation and assessment



## Case 1: The implementation of the nationwide electronic patient record system (EPR) in Finland

the Decision in Principle by the Council of State on securing the future of health care, given 11.4.2002

”Nationwide electronic patient records will be introduced... by the end of 2007”

The National Health Project Programme

- >EPR project
- >Ministry of social affairs and health: a working group
- >R&D funding for 2003-07
- >regional implementation

## Strategy, January 2004;

How it all will be done by the year 2007

Defines the common content and structure that should be used in every EPR system in all organizations

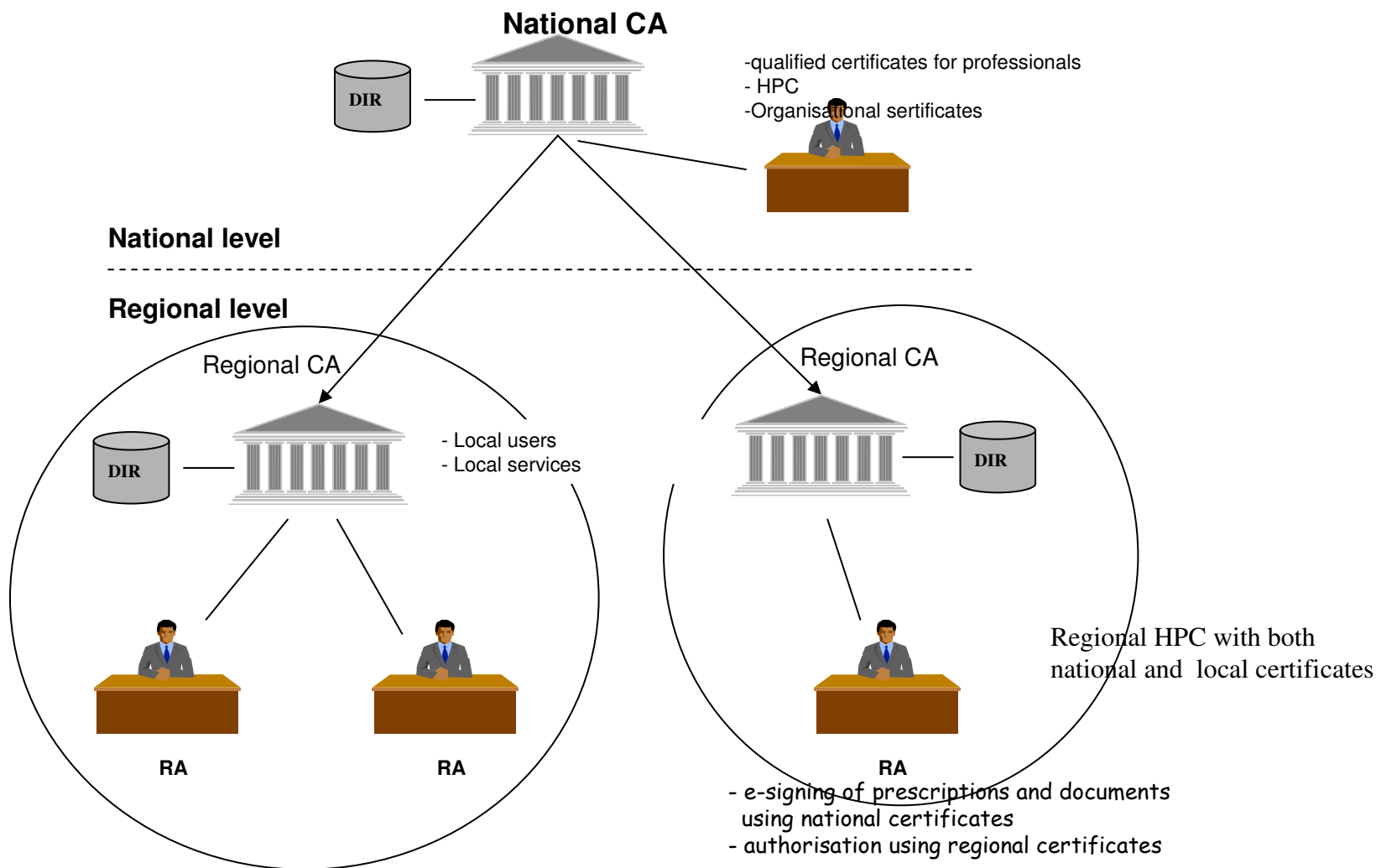
Defines the principles of the architecture needed to build a national system of data transfer

# The common content and structure that should be used in all organizations

1. Core data, code server (semantic interoperability)
2. Open standards for interoperability (xml-based HL7 CDA R2-standards)
3. National guidelines for data safeguarding (informed consent, secure archiving, e-signature, identification of patients, documents, professionals and organizations by ISO/OID-standard, PKI architecture)
4. Support for regional implementation (State funding to regional implementation projects)

## Case 2: Smart cards and certification policy for health care in Finland

## Two level PKI system for health care



## State of art of smart cards in Finnish Health Care

- smart employee cards distributed by hospital regions including 1-2 certificates
- Cards are used for security and local certificates for e-signing local documents
- health professional cards include 2 certificates (one local and one national)
- national certificates and e-signature keys are used to e-sign prescriptions and patient documents
- 11 of 20 hospital regions are using/planning to use the same CA
- 9 of 20 hospital regions already use security and smart cards for local authentication

- the Finnish e-prescription pilot have distributed 200 HPC cards for GP's working in hospitals, pharmacies and health care centres with national certificates. Cards are used for strong authentication and e-signature purposes
- The national CA is under development and is already piloting the distribution of national certificates for medical doctors (TEO)
- One hospital region is using HPC cards to sign at local level patient documents in XML format
- The Finnish Medical Association starts from 1.1.2006 to distribute smart cards for its members. Those cards includes both the national certificate and a bank certificate
- 400 000 European health cards are delivered



# About Experiences

- positive effects:  
from IT implementation to development  
of social and health services and  
processes
- new structures and “ownership” take  
time
- realistic time frame
- management of the change in HC



# Thank You

[hannu.hamalainen@stakes.fi](mailto:hannu.hamalainen@stakes.fi)