

Analysis of International EHR Systems

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In the U.S., Europe and the World...

• **HealthCare Information Technology (HCIT) deployment continues to lag behind other industries.**

– Healthcare always looks like the “backward poor cousin” to other industries such as finance, transportation, manufacturing, etc.

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Why?

- Professional Structure
 - Lack of Authority
- Medicine as an Art
 - EBM?
 - Training/Cultural Differences
- Varying Health Systems
- ROI
- Lack of Standards

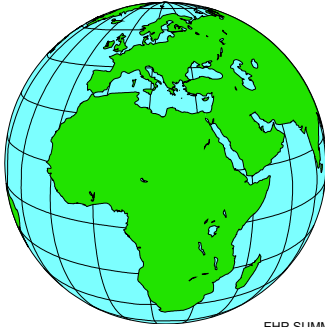
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Why IT in Healthcare?

- Sharing of Information
 - Continuity of Care
- Better Efficiency
 - Less Disparate Systems
 - Financial and Management Issues
- Guidance to Practitioners
 - Protocols and Reference Systems
- Leveraging Skill and Knowledge

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Analyzing International Developments



- **Cultural Aspects**
- **Status of IT**
- **Information Infrastructure**
- **Standards Needs**
- **Decision Making Process**

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World-wide Focus on EHRs

- Different Concepts
- Agreement that EHRs Depend on 3 Key Areas:
 - Terminology
 - Structure
 - Interoperability in Communication

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Success?

- Success is defined differently in various regions
- For example:
 - US – Financial and Provider Benefits
 - National Health Systems: Public Health Benefits

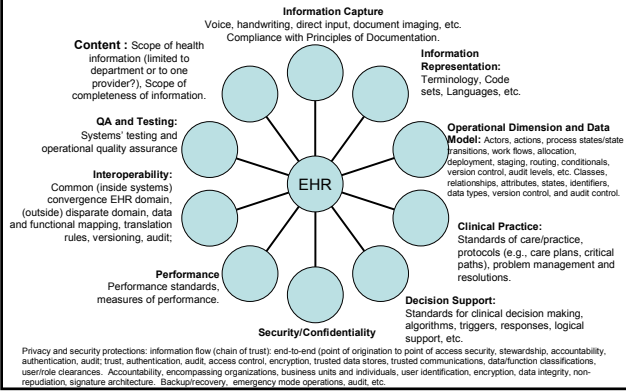
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What is an Electronic Health Record?

- PMRI – Patient Medical Record Information - US
- ICRS – Integrated Care Record Services - UK
- CMR – Computerized Medical Record – (US, Int'l, ?)
- CPR - Computer-based Patient Record (US, Int'l)
- PCR – Patient-carried (Card-based) Patient Record (G)
- PHR – Personal Health Record (int'l)
- EMR – Electronic Medical Record (US)
- DMR – Digital Medical Record (Asia)
- EPR – Electronic Patient Record
- EHR – Electronic Health Record
- LHII – Local Health Information Infrastructure for EHRs (US)
- CCR- Continuity of Care Record

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10 Dimensions of the EHR

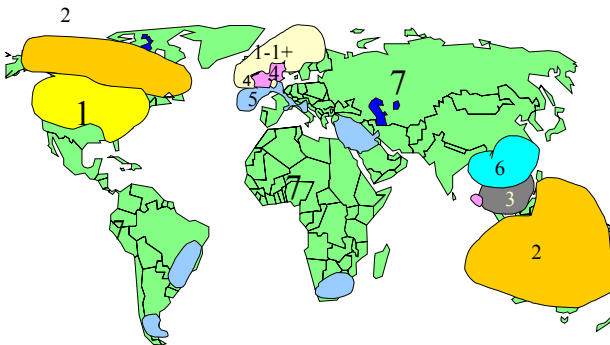


What Accelerates or Slows Progress?

- Health System
- Data Protection Culture
- Infrastructure
- Computer and Web Progress
- General Status of a Country
- Local Industry - International Industry
- Funding
- Approach: Top down or organization driven

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Comparing the World



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International Comparisons

1. USA
2. Europe: UK, Germany, Scandinavia, Benelux (Netherlands, Belgium, Luxemburg)
3. Pacific Rim: Japan, Australia, Others

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How Does the US Compare to other Countries?

- Relatively Big Investments
- Cottage Industry
- No Driving Force
- Different Domains
- Incentives

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LHII EHR

- A Regional System where information is connected through pointers. Similar to CHINs.

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Principles

1. No central or linked system
2. Providers are stewards of the information
3. Not all information is to be shared
 - Finding relevant information
 - Management issues of health information

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- **The ROI argument for EHR systems now can include business objectives such as:**

- Enable “eHealth” strategy
- As a prerequisite for Patient Safety in general and CPOE in particular
- Minimizing member/patient “churn”
- Increasing Patient/Physician contact
- Involving a Patient in his/her own care
- etc.
- Enforcing and Managing HIPAA Privacy Policies

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Canada

- National Strategy to Create EHRs
- InfoPath
- Based on HL7

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United Kingdom

- World's Largest Project
- England Only
- Focusing on Infrastructure and Spine
 - Terminology, Architecture, and Interoperability
- Taking Great Risks

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Europe

- North/South Axis
- Politics
- Wide Range of Health Systems
- Focus on
 - East European Countries
 - Scandinavian Countries
 - Central European Countries

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Denmark

- 1995: IT-policy plan for Health
 - National Health Network (MedCom)
 - Electronic Patient Records
- Strategies
 - 1996: Action plan for EPR
 - Specific initiatives
- Funding of local projects, i.e. EHR Observatory
 - 1999: National IT-strategy 2000-2002 for the hospital sector
 - 2002: National IT strategy 2003-2007 for the health sector

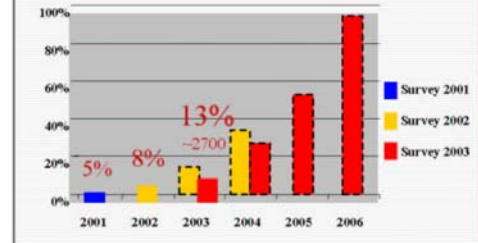
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Denmark

- Strategy goals
 - 100% coverage of EHR in hospitals by 2006
- ...based on a common Basic Model for EHR
- Large scale national XML communication between & inside hospitals by 2005
- Internet based secure health network by 2005
 - already in place
- National health portal by 2004
 - going live in 6 days

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National EHR coverage (beds)



Scandinavian Countries

- Sweden
- Norway
- Finland
- Denmark
- Iceland
- Others

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North Karelian Health Care District

Mr. Heikki Ahtola Surgeon TEHRE 2003:

"HealthNet" Electronic Patient Record

since 1999 100% coverage (beginning 1996)

1000 users (180 doctors)

1450 PC workstations

50 000 eDocuments monthly (571 000/year)

33 000 referrals and discharge letters in 2002

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- Mr. Heikki Ahtola Surgeon TEHRE 2003
- Electronic Regional Chain of Care
 - referral and feedback
 - all patient data in hospital
 - wireless ward round trolley
 - digital signature and archive
 - electronic discharge letter to GP

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Southern Europe

- Portugal
- Spain
- Italy
- Greece
- Israel
- Others

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Spain

- **The majority of the regions are beginning the development of their own regional EHR**
- **Others, the first that developed Electronic Health Systems, are developing a MBDS to share clinical information between providers**
- **Some medical societies, technicians and companies are asking for the establishment of a MBDS at national level to allow to share the clinical information (e.g. SEIS meeting on November, 25 in Madrid: Spanish Society on Health Informatics)**

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Spain

- **EHR for Hospitals and PHC**
- **Digitalisation of medical images**
- **e-prescribing**
- **Patient cards**

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Western Europe

- Benelux Countries:
 - The Netherlands
 - Belgium
 - Luxemburg
 - France

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The Netherlands

- Often cited as the “most advanced” country
- Wide-spread use of computers at the GP level – long before the US

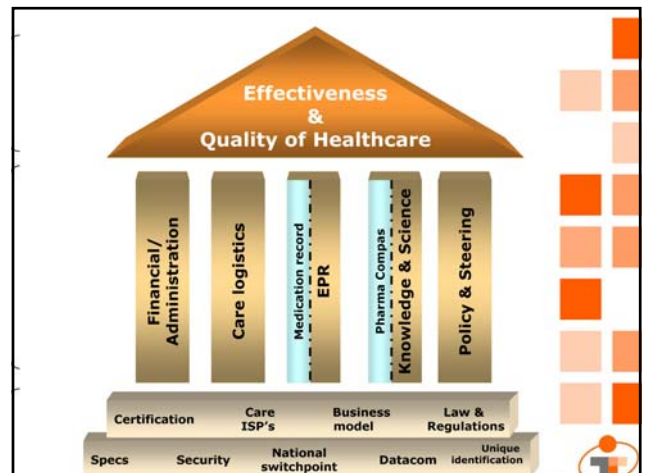
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NICTIZ

Creation of the right conditions for the nation-wide provision of healthcare information for and about the patient

- AORTA**: nation-wide IT infrastructure in the care sector to ensure secure/trust and transparent information exchange
- EPR / application-integration** for the exchange of care-related, administrative and logistic information
- Focal point**: nation-wide medication record by 01-01-06

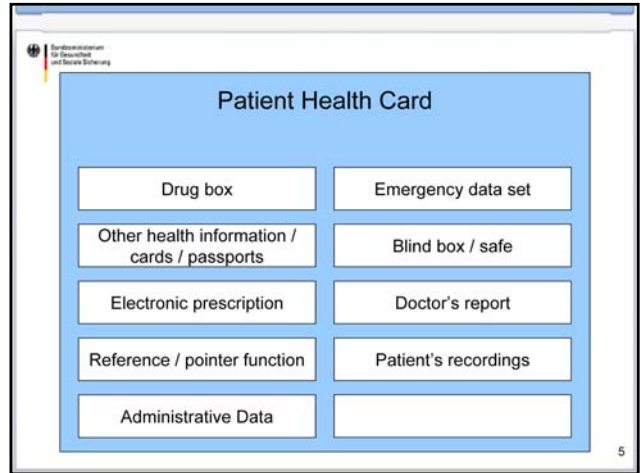
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Germany

- Central European Area
 - Incl. Switzerland, Austria and other Neighbors

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The slide features a blue header with the text 'Smart cards as key instruments of health telematics applications' and the logo of the 'Bundesministerium für Gesundheit und Soziale Sicherung'. Below the header, two smart cards are displayed. The left card is a 'Gesundheitskarte' (e health card) for Maria Musterfrau, with a contact number 01101-1211611234 and the logo of 'Krankenkasse'. The right card is an 'Arztweis' (Health Professional Card (HPC)) for Dr. med. Franz Müller, issued by the 'Arztekammer Westfalen-Lippe' with ID D0550047110 and a date of 15.12.1965. Both cards have a gold-colored chip and a photo of the cardholder.

Australia

- Similar to Canada, working on a grand strategy
- Regional success

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New Zealand

- Current Mini-EHR is similar to CCR Approach in US

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Hongkong

- Implementing a System Using LOINC and SNOMED

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Other Asian Countries

- Korea
- Thailand
- Malaysia
- Singapore
- China
- Japan

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Summary

- Despite the Activities around EHRs on a Global Basis, there is no consensus on
- A Definition of an EHR
 - A Roadmap to Implement an EHR

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Achievable Goals

- Create Continuity of Care
- Guidance to Practitioners
 - Protocols and Reference Systems
- Create Real-time Financial Systems
- Focus on Simple Benefits
 - Email for patients, Better Scheduling Systems, Patient Education regarding PHR
- Leveraging Skill and Knowledge

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Other CCR-related Efforts

- Similar efforts internationally
- Presentations at TEHRE 2003, London
 - Finland
 - The Netherlands
 - Germany
 - Denmark
 - Spain
 - England

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A large, 3D, metallic-looking 'Thank you' text graphic is centered on the slide. The letters are thick and have a slight shadow, giving them a three-dimensional appearance.

Attend:
Mobile Healthcare Conference
October 26-27, 2004

Survey on Electronic Health Record Usage and Trends

<http://www.medrecinst.com/resources/survey2004/index.shtml>

www.medrecinst.com

EHR SUMMIT III Copies of these slides may be obtained
by emailing peterw@medrecinst.com