



State of ePrescribing  
across Europe and  
worldwide:  
Strategies and  
Implementations

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**ePrescribing & Medication Management**

Ljubljana, 19. June 2006



# ePrescribing: Starting Point

- ePrescribing & Medication Management
  - Part of many National eHealth strategies
  - Early element of Implementations
  - **Some of the first services (to become) available for consumers and patients.**

# ePrescribing is frequent

Example Germany (82.5 mio population)

800 millions individual prescriptions per year

15.4 millions individual prescriptions per week

Physician writes

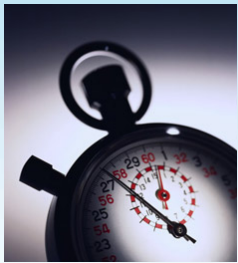
15.4 millions  
online accesses

Pharmacist

15.4 millions  
online accesses

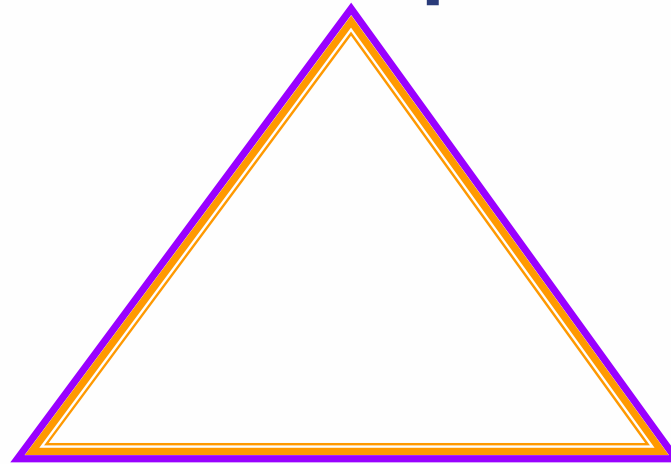
more than 8.500 online accesses per minute

for a 5-days working-week and office hours from 7:00 – 19:00 hrs



# ePrescribing & Med. Managmt: A group of eHealth services

## Electronic Transport of Prescriptions



**Informed  
Prescribing**

**Medication  
Records**

# Rising the quality of healthcare

- Reduce medication errors (informed prescribing)
- Reduce the cost of high quality clinical healthcare
- Stop media disruption for the transmission of prescriptions to the pharmacy and further on
- Medication Records protect the patient by support informed prescribing
- Medication Records are a significant step to EHR

# Health Systems perspective

- Simplify Reimbursement of Medicines
- Monitoring the Dispensation of Prescriptions
- Advanced Medication Management, e.g. supporting Disease Management Programmes
- Secondary Use
  - Clinical Research
  - Evaluation/Public Health/Statistical Analysis

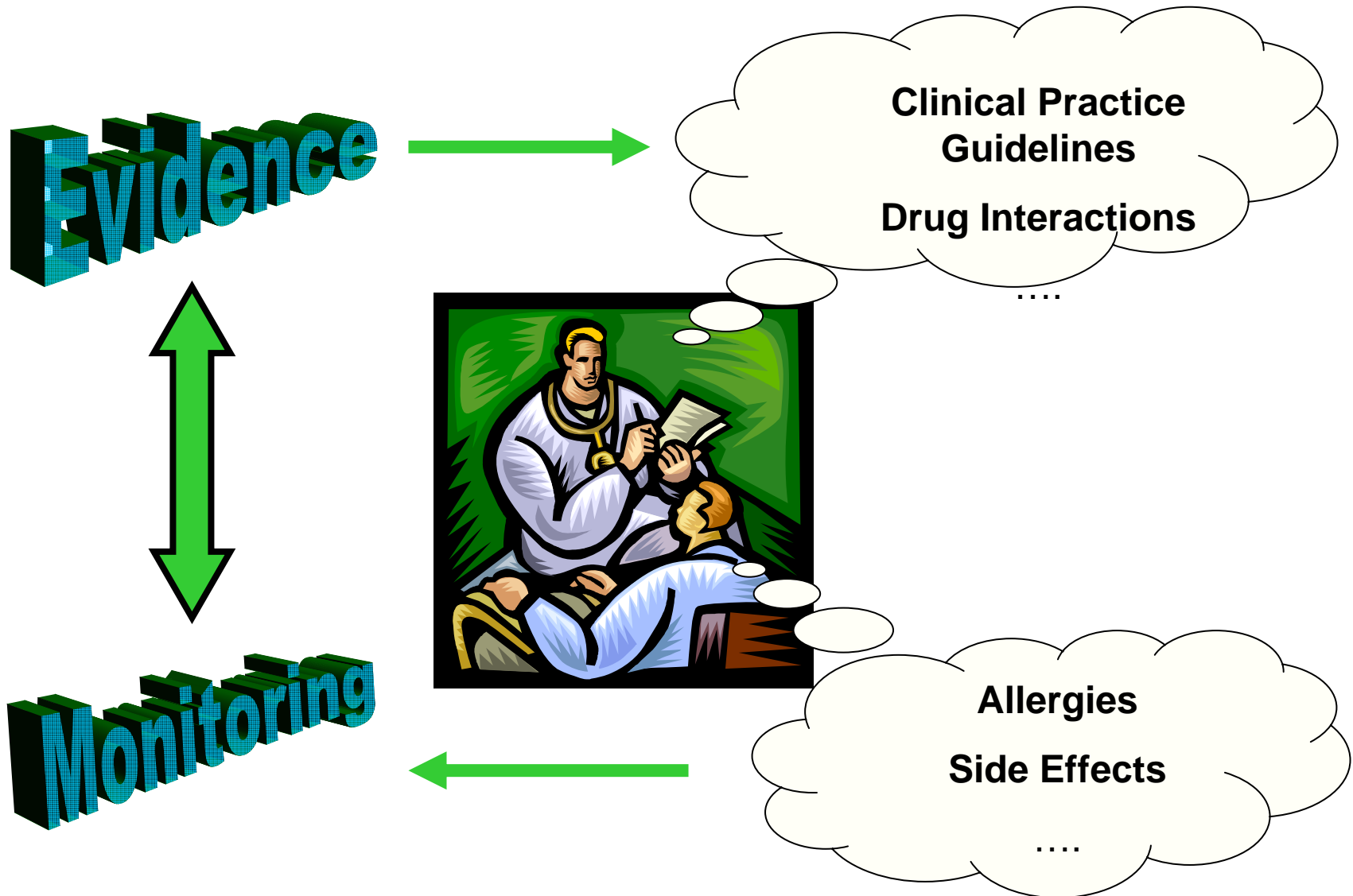


# Impact on Quality & Safety

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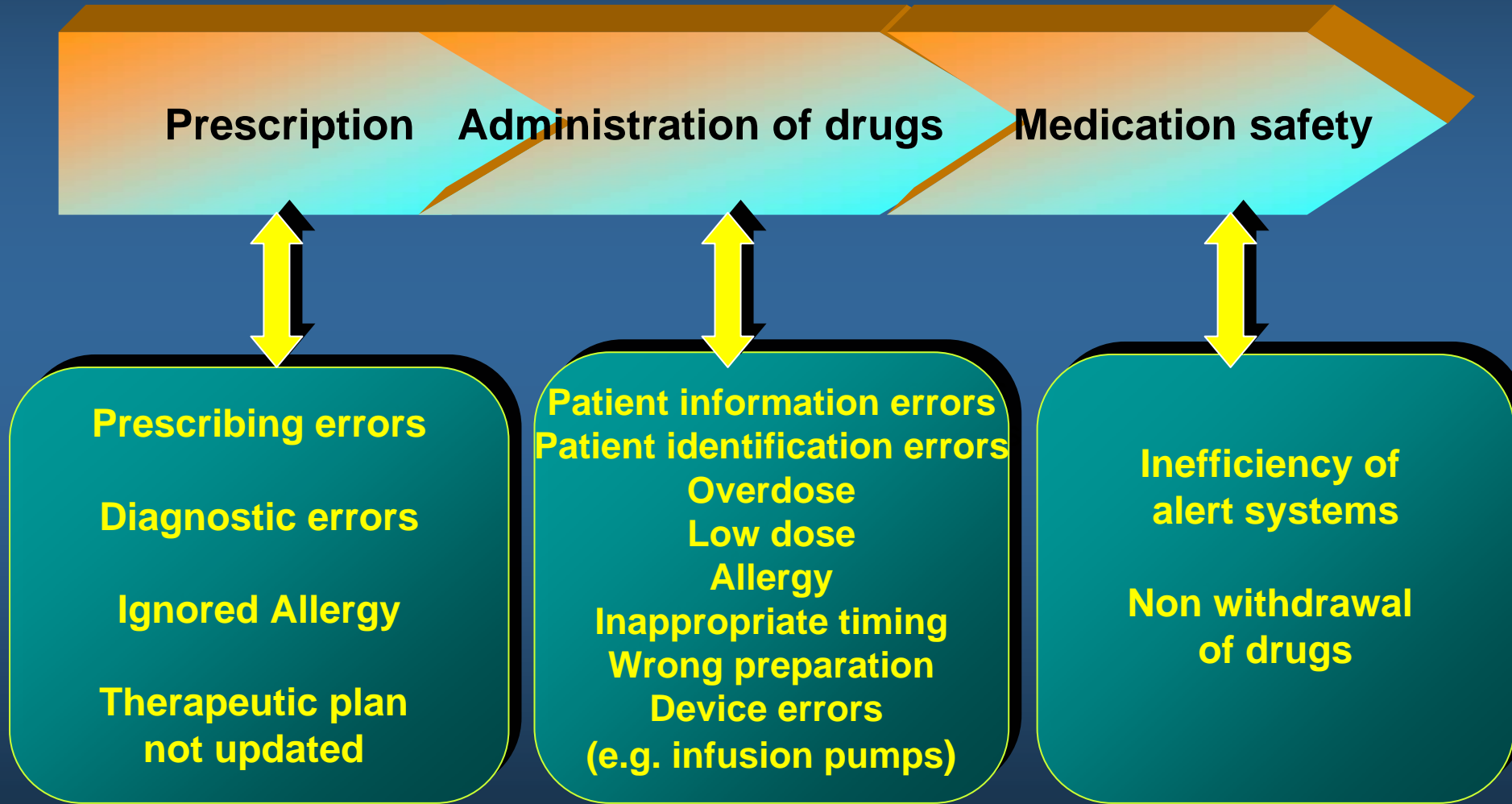
- Outpatient Advanced CPOE and EMR
  - Avoid 2.1 million adverse drug events per year (national adoption)
- Inpatient CPOE and EMR
  - Decrease serious medication errors by 55%
- Healthcare information exchange and interoperability between settings
  - Improve physician decision-making at the point-of-care through complete information access

# The Act of Prescribing





# Drug prescription errors



# COM (2004)356: Eur. eHealth Area

- By the end of 2006, Member States together with EC should **identify and outline interoperability standards for health data messages and electronic health records**, taking into account best practices and relevant standardisation efforts.

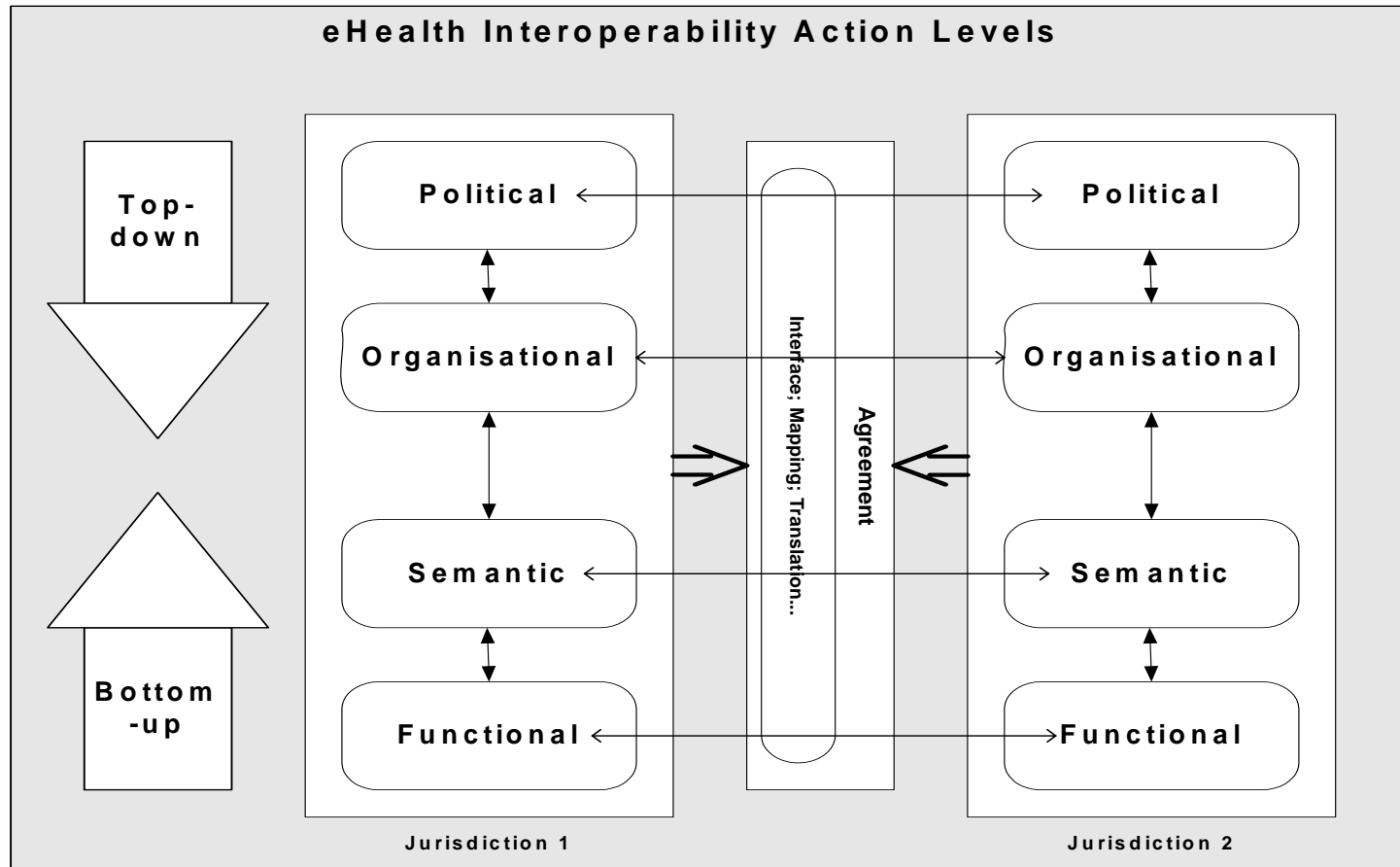
# CEN/ISSS eHealth Stand. Focus Group

- Of total 15 recommendations, 4 are dedicated to ePrescribing and messaging:
  - Reducing medication-related errors, and e-prescribing
  - Electronic transfer of prescriptions
  - Efficiency of healthcare processes – Workflow models and clinical pathways
  - Information exchange to support inter-working and the mobile citizen

# i2-Health Approach

- Patient information in digital form must be at least as accessible and usable as paper based data  
→ **Meaningful exchange of medical data.**
- i2-Health activities
  - review existing approaches and pilot solutions,
  - analyse use cases,
  - perform need and gap analyses
- Prepare recommendations for the deployment of interoperable eHealth infrastructures and services

# WP2 Interoperability Framework (Draft): eHealth Interoperability Action Levels



## Jurisdiction:

The boundary and scope of authority of a person, group, or organization. May be bound by a geographical or geopolitical boundaries, and represents a specific domain of influence, such as: political, organizational, professional, familial, and others.

# Realising citizen-centred European health services: 4 action levels

<p><b>Health policy:</b> <u><i>cooperation</i></u></p>	<ul style="list-style-type: none"> <li>• Vision &amp; strategies</li> <li>• Processes &amp; measures, incentives</li> <li>• Socio-economic (sustainable), legal framework</li> <li>• Accreditation and certification</li> </ul>
<p><b>Health service providers (Organisational level):</b> <u><i>collaboration</i></u></p>	<ul style="list-style-type: none"> <li>• Organisational structures and culture</li> <li>• Intra &amp; inter-jurisdictional service processes</li> <li>• Change management, behavioural change</li> <li>• Systems thinking, business process re-engineering</li> </ul>
<p><b>Semantic <u><i>interoperation</i></u></b></p>	<ul style="list-style-type: none"> <li>• Terminologies, classifications</li> <li>• Translation</li> </ul>
<p><b>Technical / functional <u><i>interoperation</i></u></b></p>	<ul style="list-style-type: none"> <li>• Technical standards</li> <li>• Hardware and software connectivity</li> <li>• User interfaces</li> </ul>

# i2-Health Layer Model applied to eP.

Political / Legal

Legal base for issuing/dispensing electronic prescriptions: National / Cross-border / Internet-Pharmacies

Organisational

Rules, existing Forms and Logistics for Prescribing, Dispensing, Reimbursement, Surveillance

Semantic

Naming (Generic/Product), Coding Schemes

Technical

Syntax (XML ..), Messaging Standards, Transportation, Networks, ...

# Interoperability Examples

## ○ Organisational Interoperability

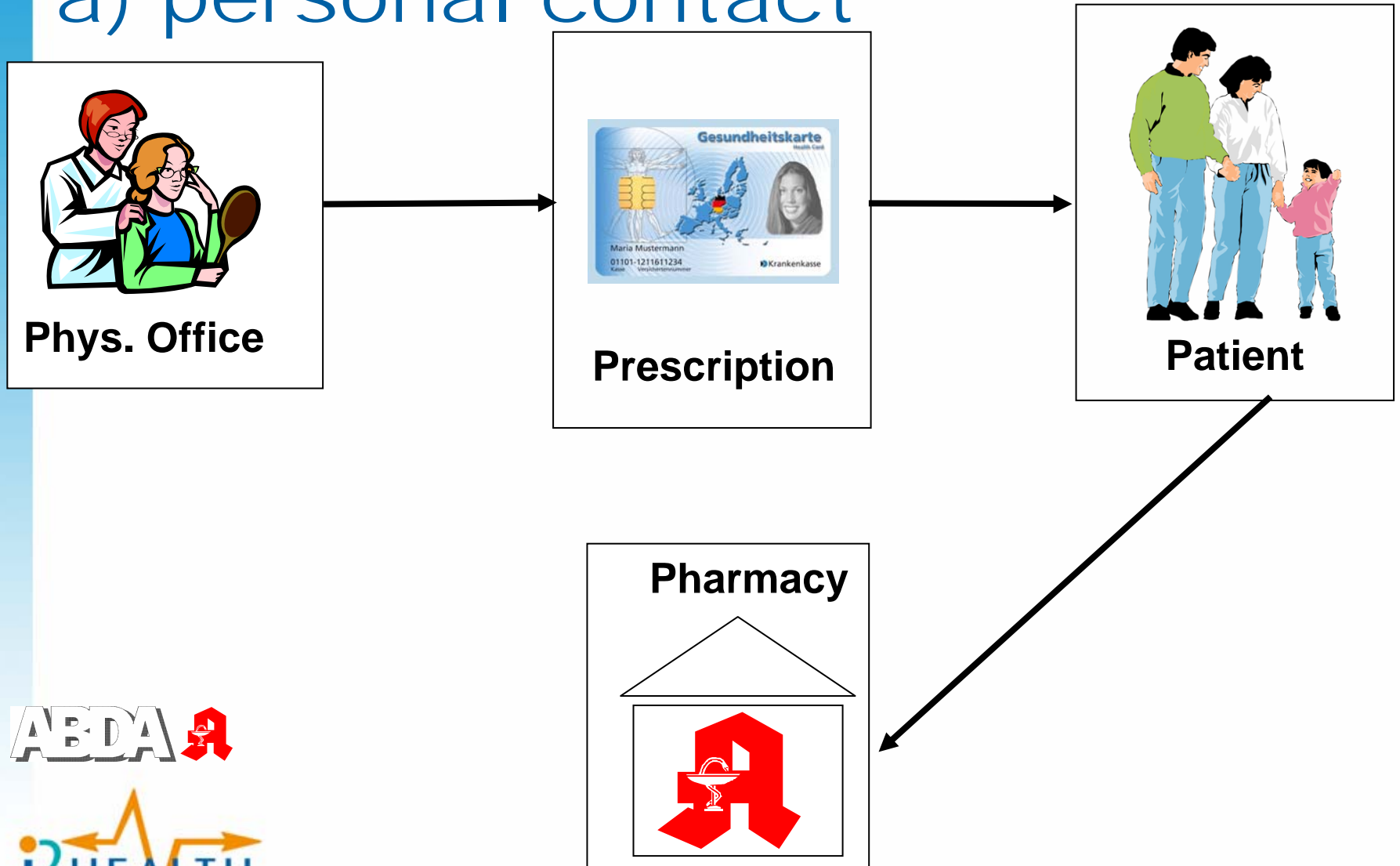
- Recognition of physicians autorisations (legal)
- Reimbursement claims; etc.

## ○ Semantic Interoperability

- Pharmaceutical nomenclature & classification
- Drug composition; branding etc.
- Instructions/Quantity (10-10-10 vs. qid; tid)

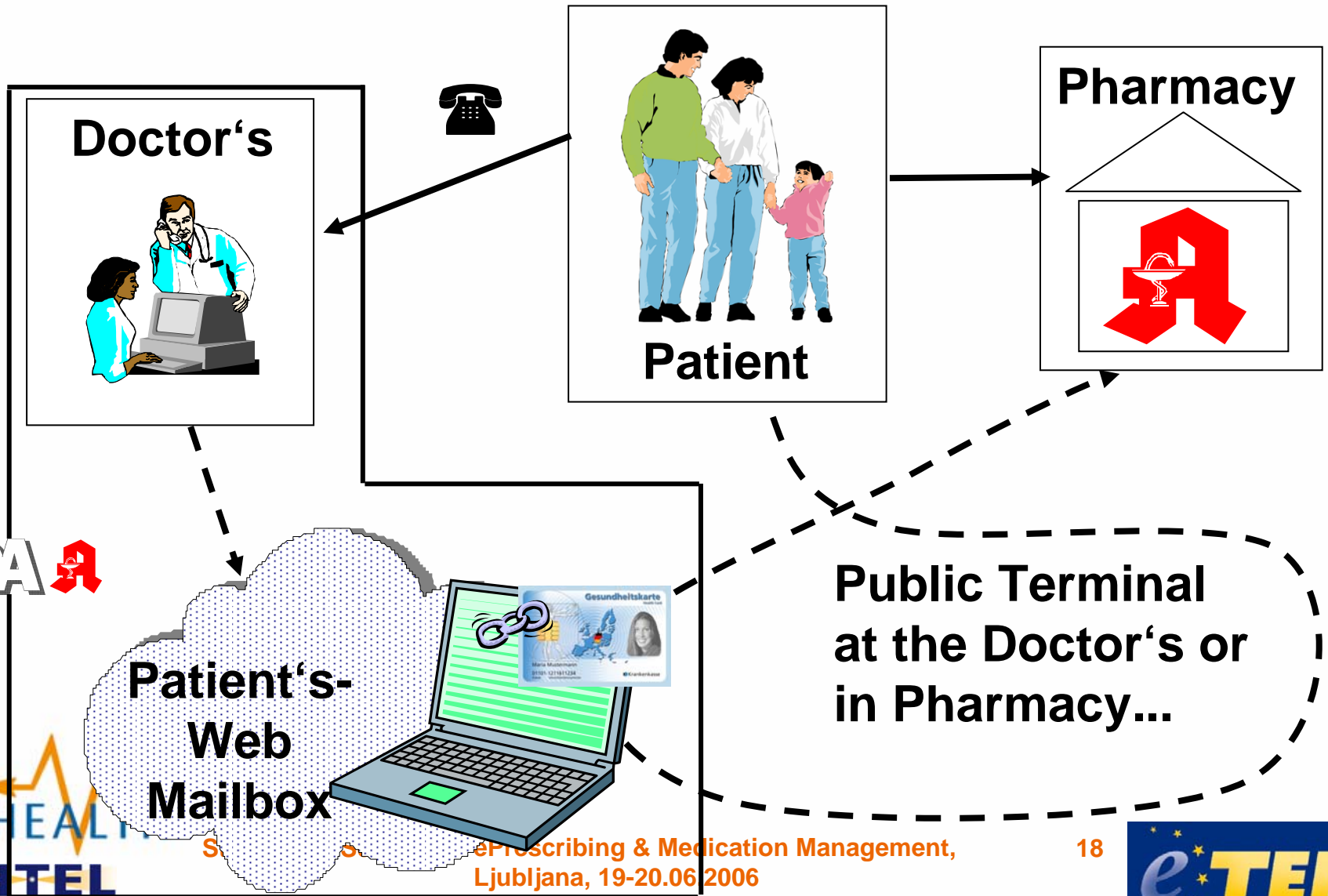
# Use cases for ePrescribing

## a) personal contact

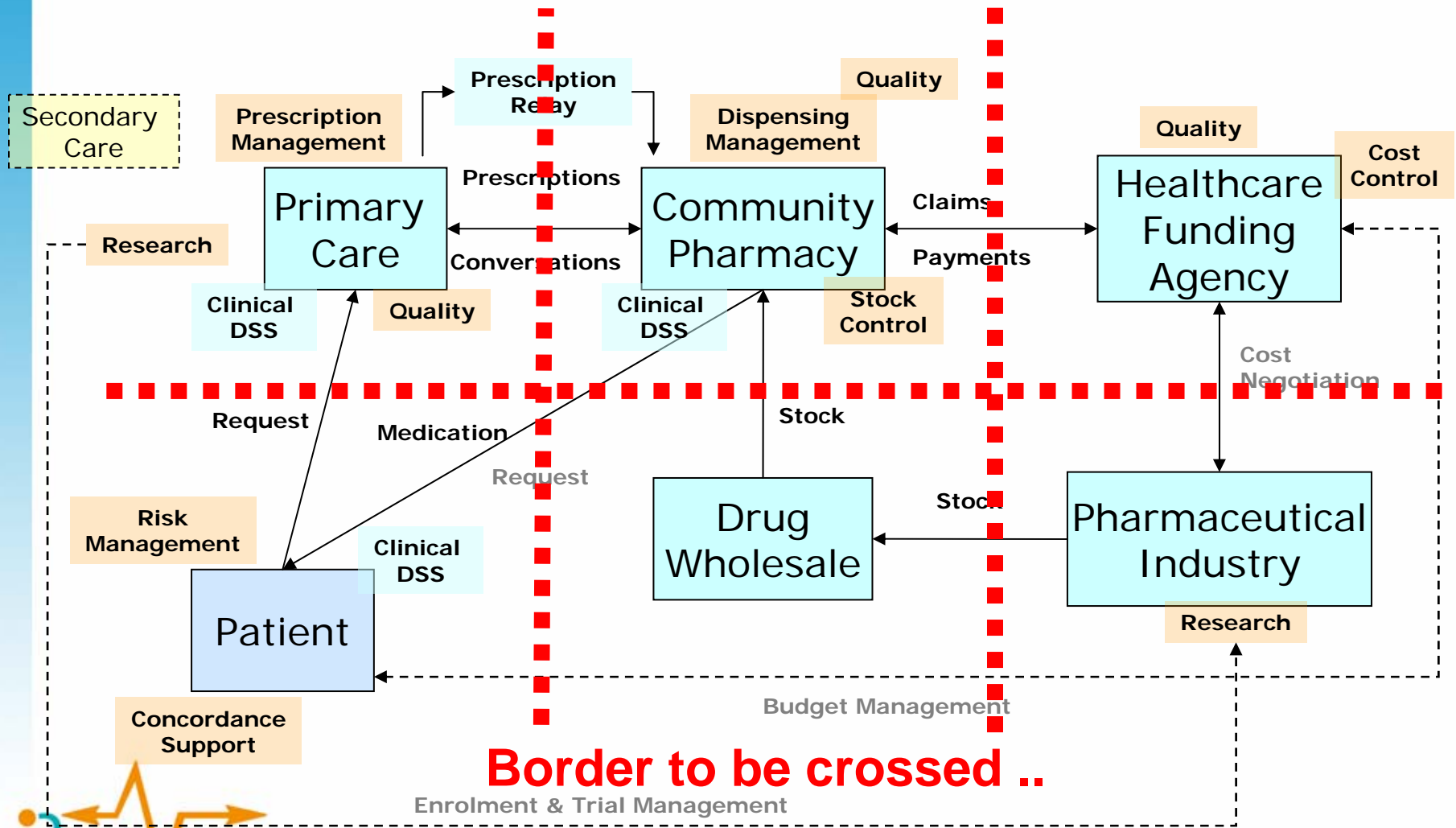


# Use cases for ePrescribing

## b) w/o personal contact

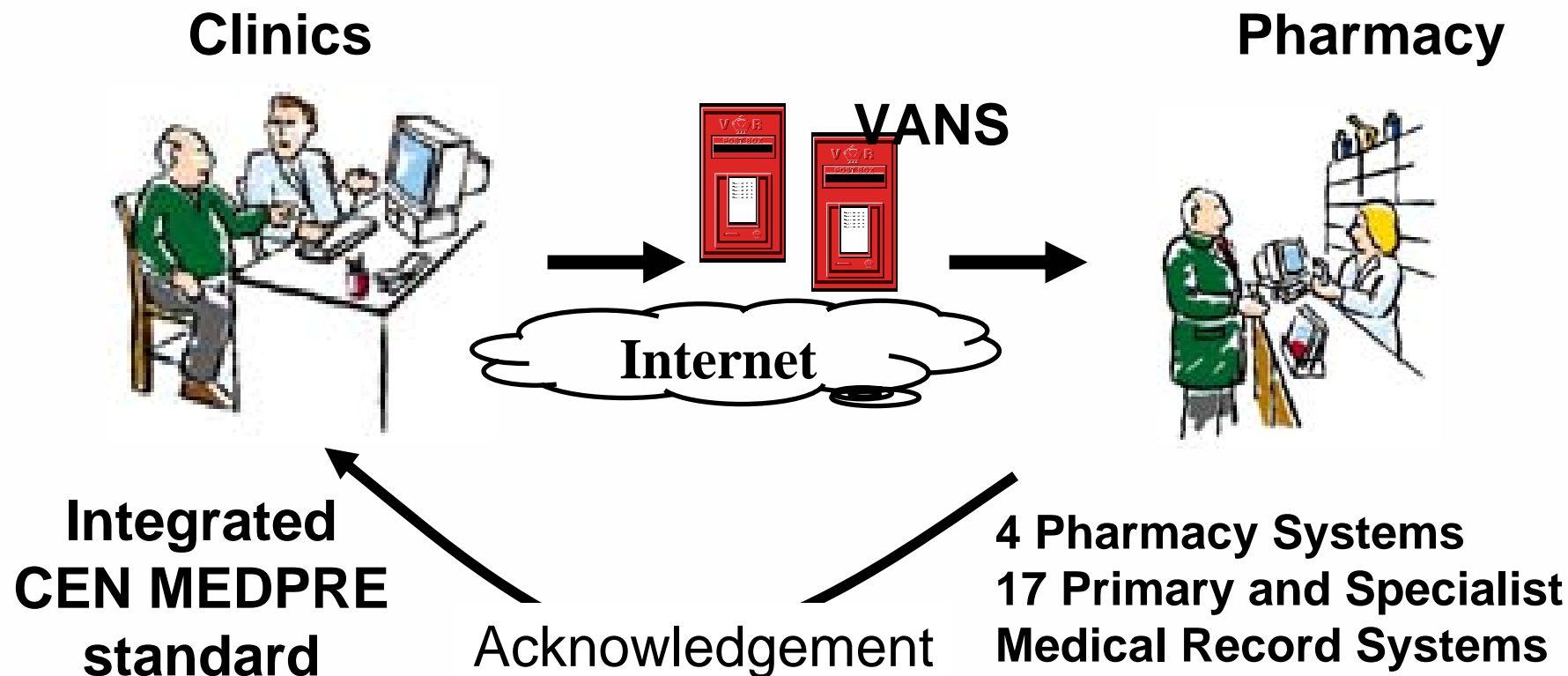


# eP: Within and Cross-Borders



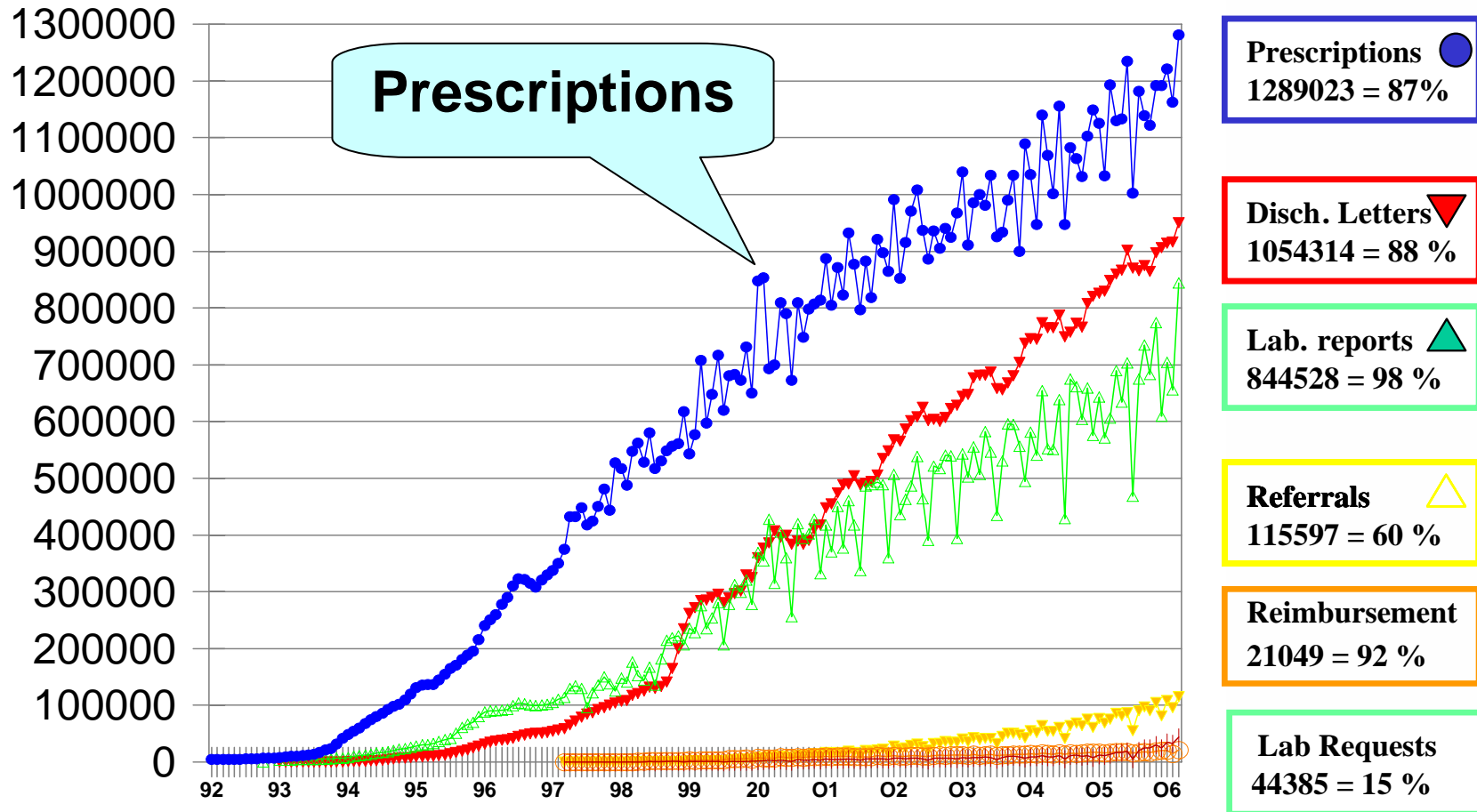
# National Implementations

## Denmark: early eP Infrastructure

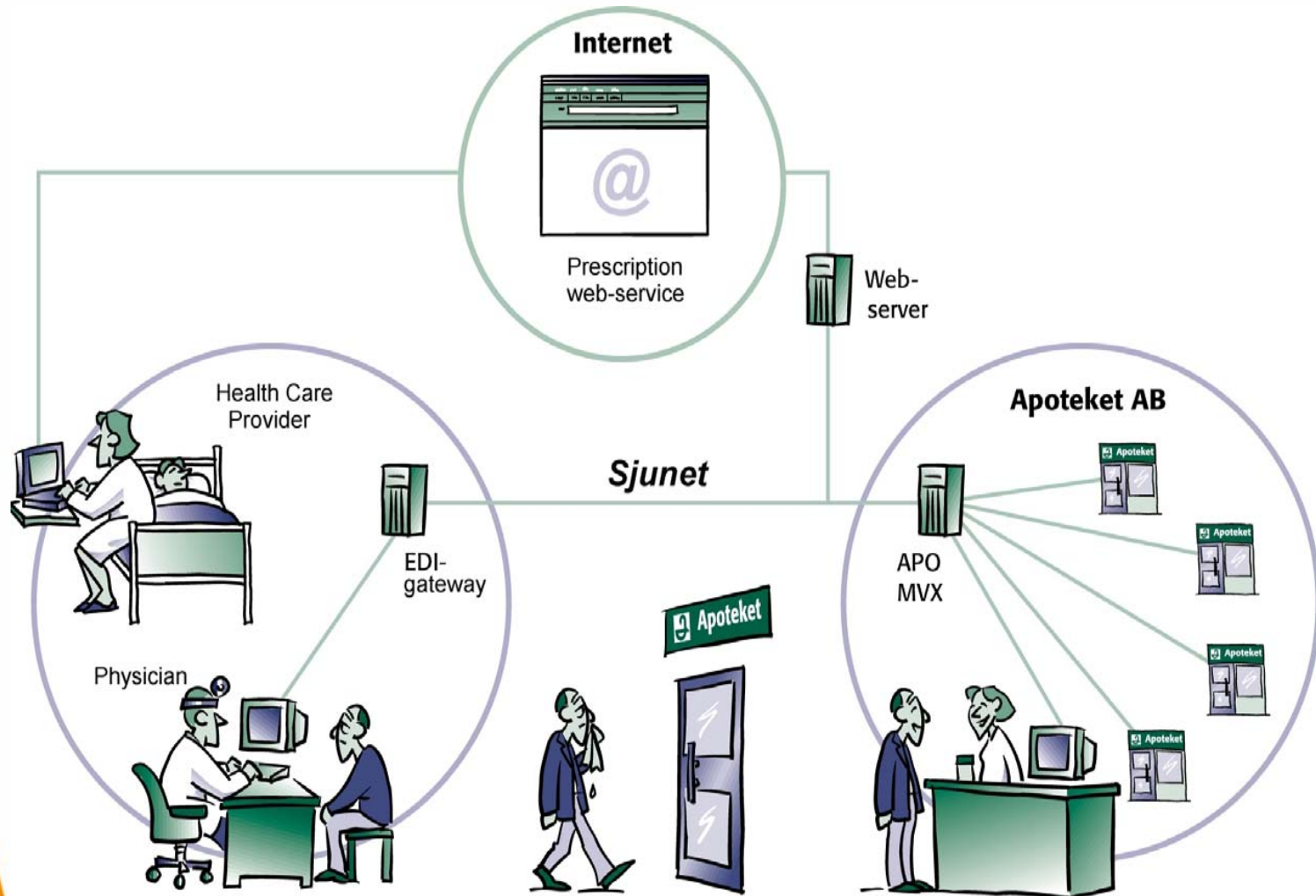


# National Implementations

## DK e-prescription: # / Month



# Sweden: ePrescribing since 6 years



# National Implementations

## NL: Medication record

- Focal point for current activities
- Medication = core chapter of EPR
- Significant:
  - Avoidable errors in medication:  
pro. 90.000 cases of hospitalization/annum
  - € 300.000.000 / annum avoidable costs
- Timeschedule
  - 2004 regional
  - 2006 nation-wide infrastructure
- Mandatory use for all care-providers
- Infrastructure suitable for full spectrum of ehealth

# National Implementations

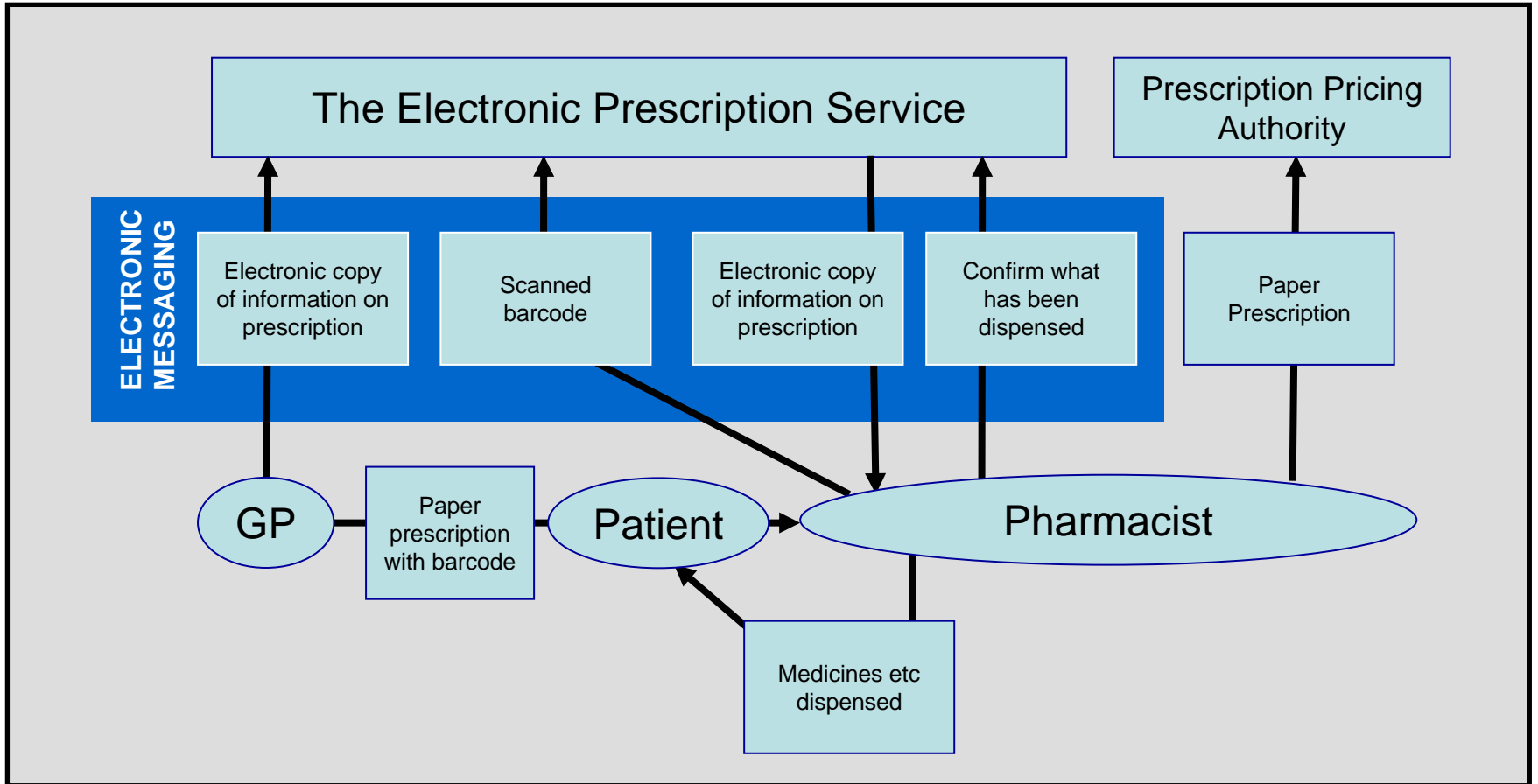
## UK: Connecting for Health

*4 major IT deliverables ..*

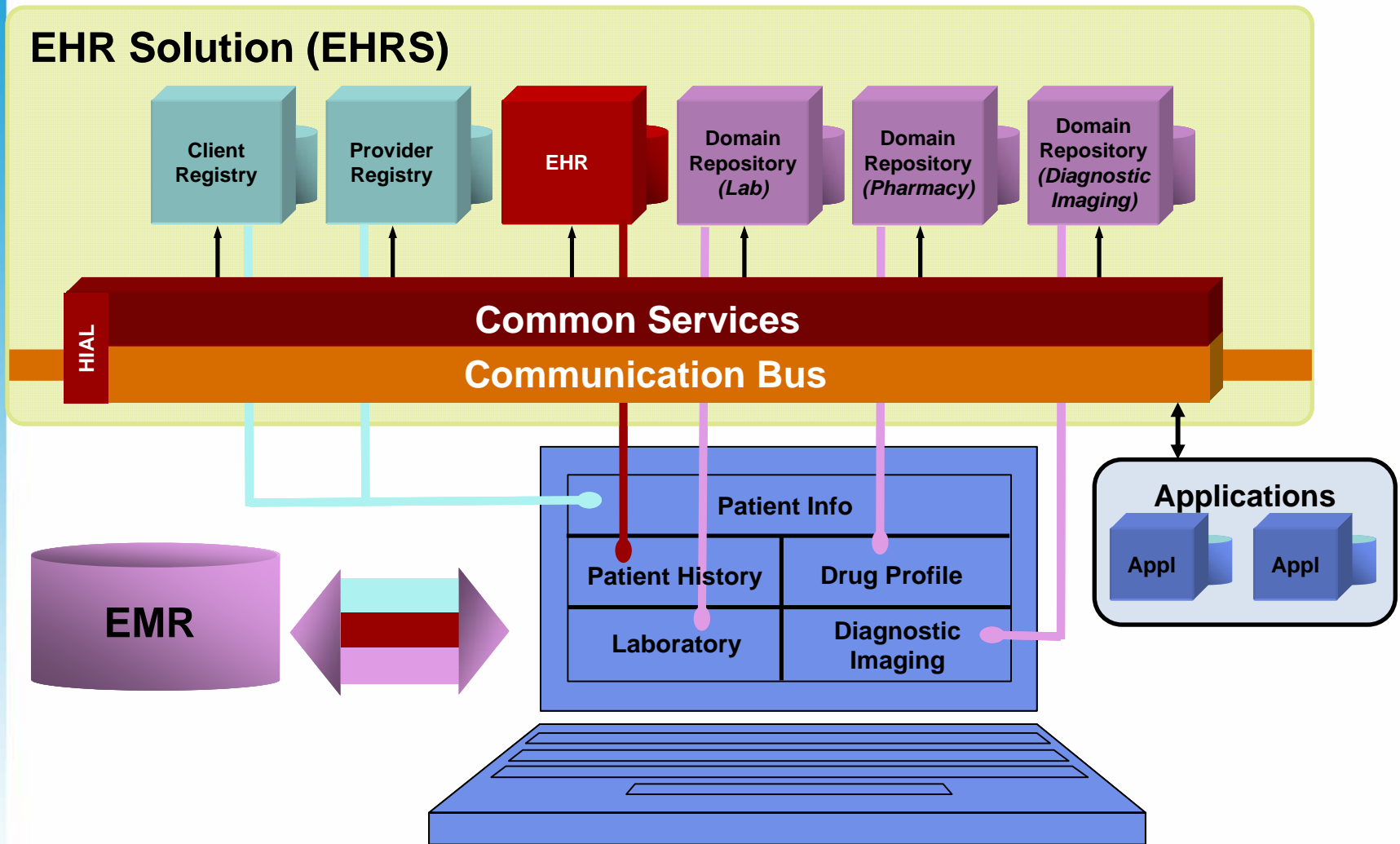
*to meet requirements of NHS Plan*

1. A robust infrastructure to support modernised health and social care, including a national approach to authentication, security and confidentiality
2. Electronic booking of appointments
- 3. Electronic transfer of prescriptions**
4. The NHS Care Records Service (NHS CRS)

# EPS Release 1

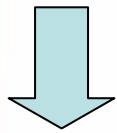


# Canada: Drug Profile as part of the EHR-System

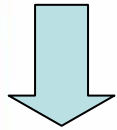


Interoperable eHRs capture all key clinical data on one screen (role-based)

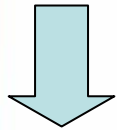
# Standards: The HL7 Example



Pharmacy DMIM 2002



Pharmacy DMIM 2003

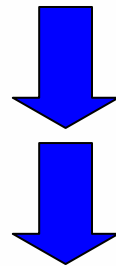


Pharmacy RMIM 2004

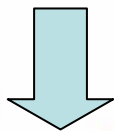
UK Development

Dutch Development

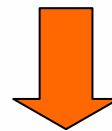
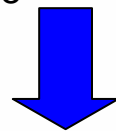
Canadian Development



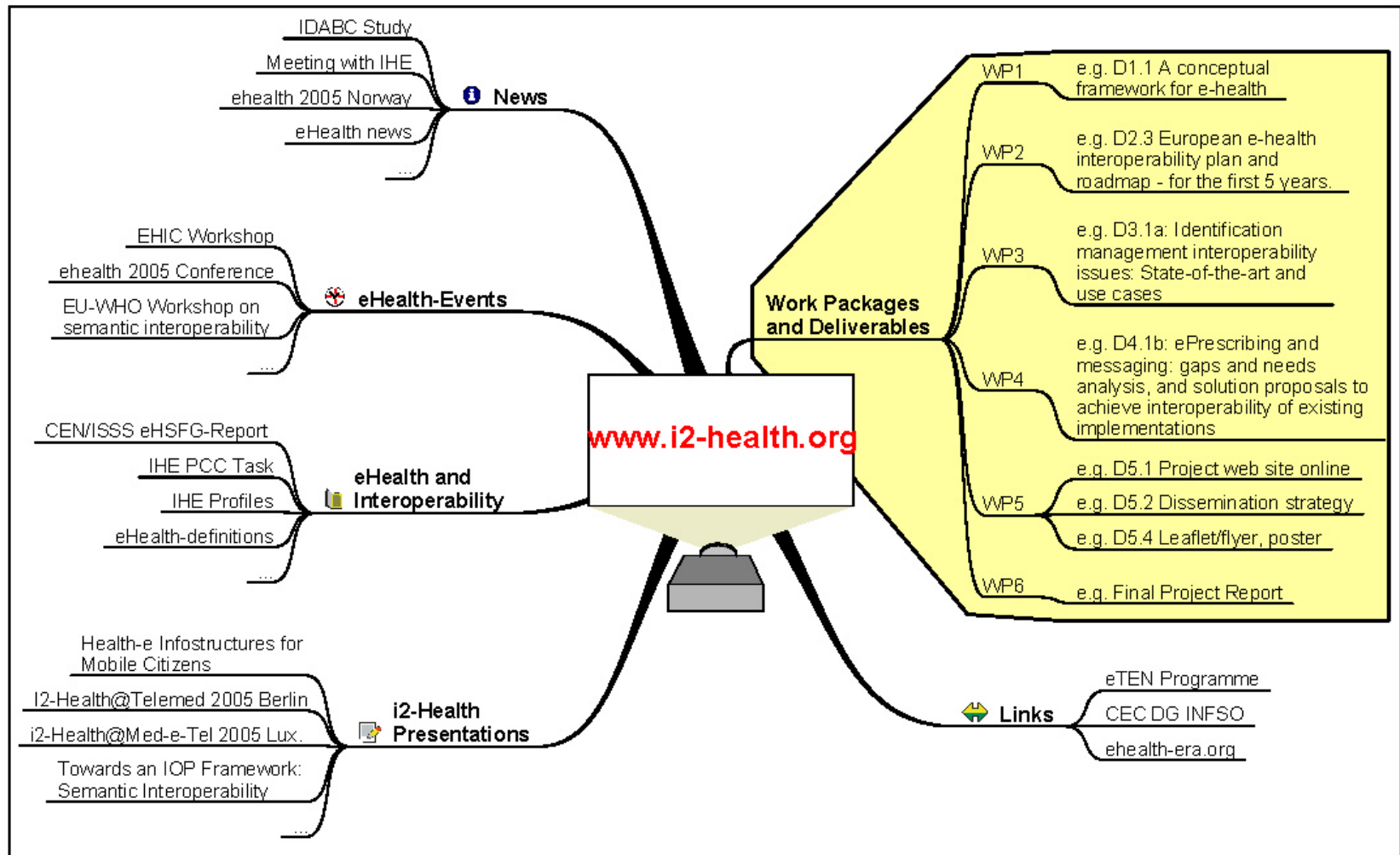
Toronto Harmonisation Meeting



Pharmacy DMIM 2005



# Conference Outcomes will be published on i2-Health website



# Website: [www.i2-Health.org|eu](http://www.i2-Health.org|eu)

**Borderless Communication for a Healthy Europe — I2-Health-Portal - Mozilla Firefox**

http://www.i2-health.org/

**Interoperability Initiative for a European eHealth Area**

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**Borderless Communication for a Healthy Europe**

**Interoperability Initiative for a European eHealth area (i2-health)**

- Citizen mobility and borderless care are key European Union policy priorities, which are supported by the European eHealth Action Plan.
- While healthcare is being thoroughly transformed, proper interoperability measures have to assure that patient information in digital form is at least as accessible and usable as paper based data.
- Health policy makers, health professionals, healthcare providers and the IT-industry have to work hand in hand to assure the meaningful and secure exchange of medical data.
- i2-Health will call on all the relevant stakeholders to join forces.

i2-health will identify requirements and submit recommendations for the deployment of interoperable eHealth infrastructures and services for trans-European use through the definition of a generic eHealth interoperability framework and common approaches to

- patient/professional identifiers
- ePrescribing and health data messages

**News**

- IDABC examines the case for streamlined cross-border mobility 2005-08-03
- i2-Health Meeting with IHE-Leadership 2005-04-30
- ehealth 2005 Conference in Norway 2005-04-21
- eHealth awards 2004 presented at the Cork Conference 2004-05-11
- European Conference eHealth2004 2004-04-18

More...

Fertig 81.169.156.63

# Stakeholder Involvement

- Review of the project results and deliverables together with specific stakeholder groups:
  - **Health Care Authorities (EHTEL Health Ministries Group) has been consulted to provide a review from the policy viewpoint.**
  - **National Competence Centres will be invited to evaluate projects results on the backdrop of their national implementations.**
  - **Industry will be invited to assess the market relevance of the interoperability measures suggested.**

# Interoperability is vital for eHealth

