



Key elements for eHealth interoperability: Useful results of the i2-Health project

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**Update on eHealth Interoperability in Europe
- focus on electronic health records –
Satellite event of TELEMED 2008,
Heidelberg, 12 June 2008**



eHealth Interoperability

- Emerging eHealth applications might stop at European borders
 - Blocking cross-border communication
 - Health ICT Market Fragmentation
- Policy drivers for eHealth interoperability
 - Citizen mobility
 - Border regions
 - Decisions of the European Court of Justice
 - Health ICT Industry
 - Pressure from stakeholder groups

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.

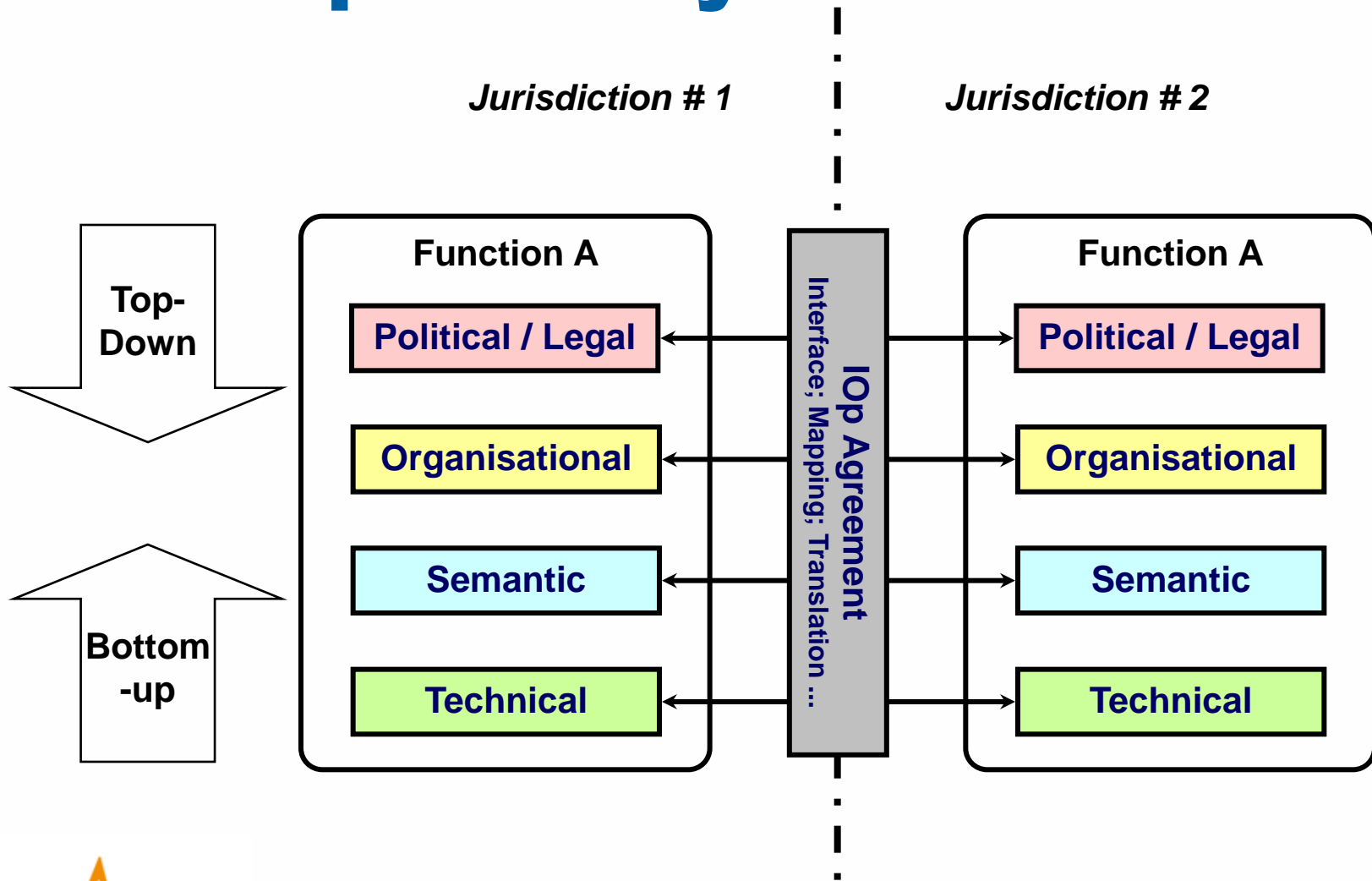
i2-H Workplan Elements

- Framework and generic elements
 - Conceptual framework (WP1)
 - Analysis of infrastructure concepts and building blocks, services and applications (WP2)
- eHealth issues for in-depth analysis
 - Identification management of actors, organisations and system components (WP3)
 - Workflow Interoperability – ePrescribing and Messaging (WP4)

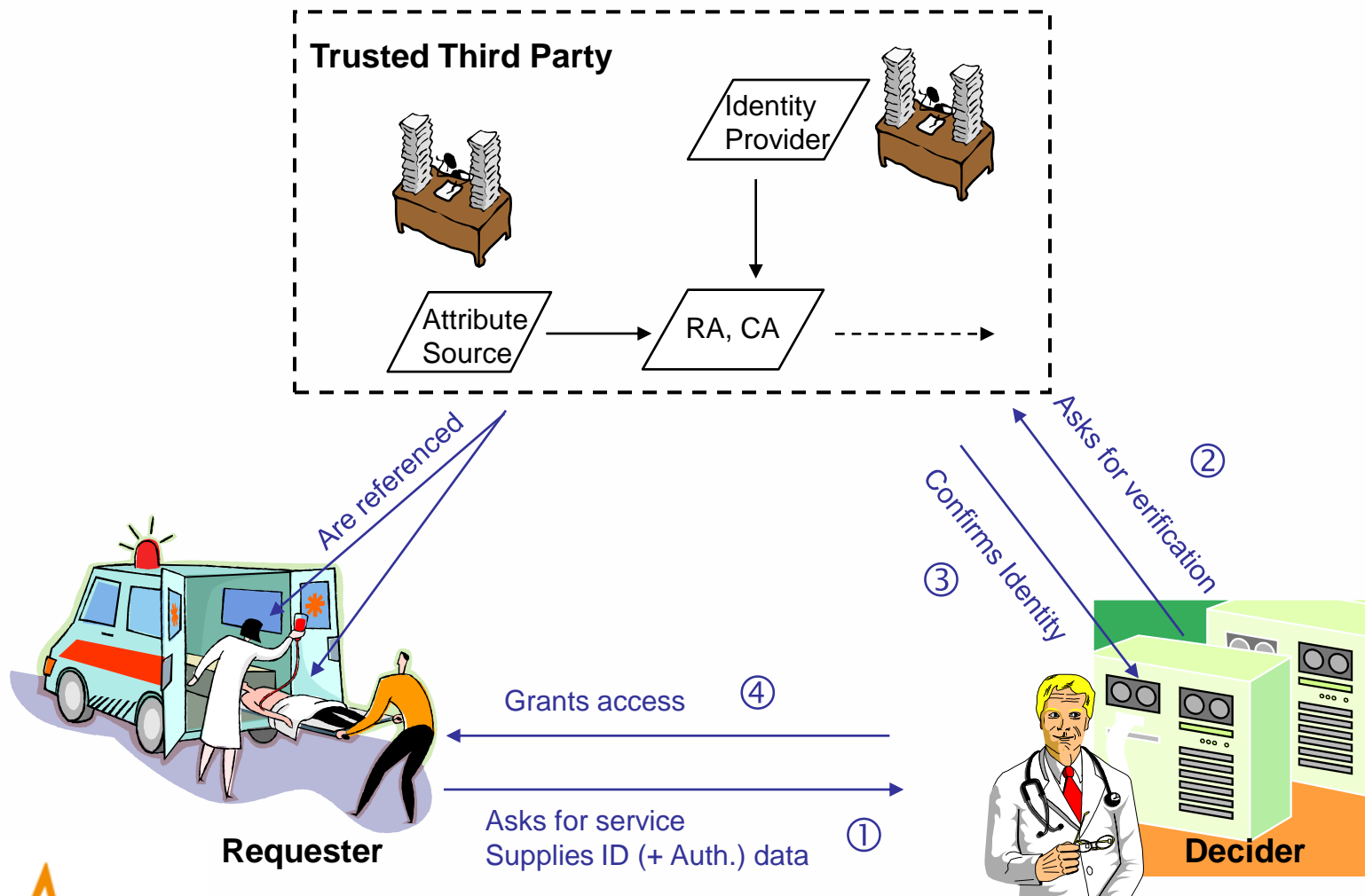
Framework: 4 action levels for citizen-centred eHealth services:

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

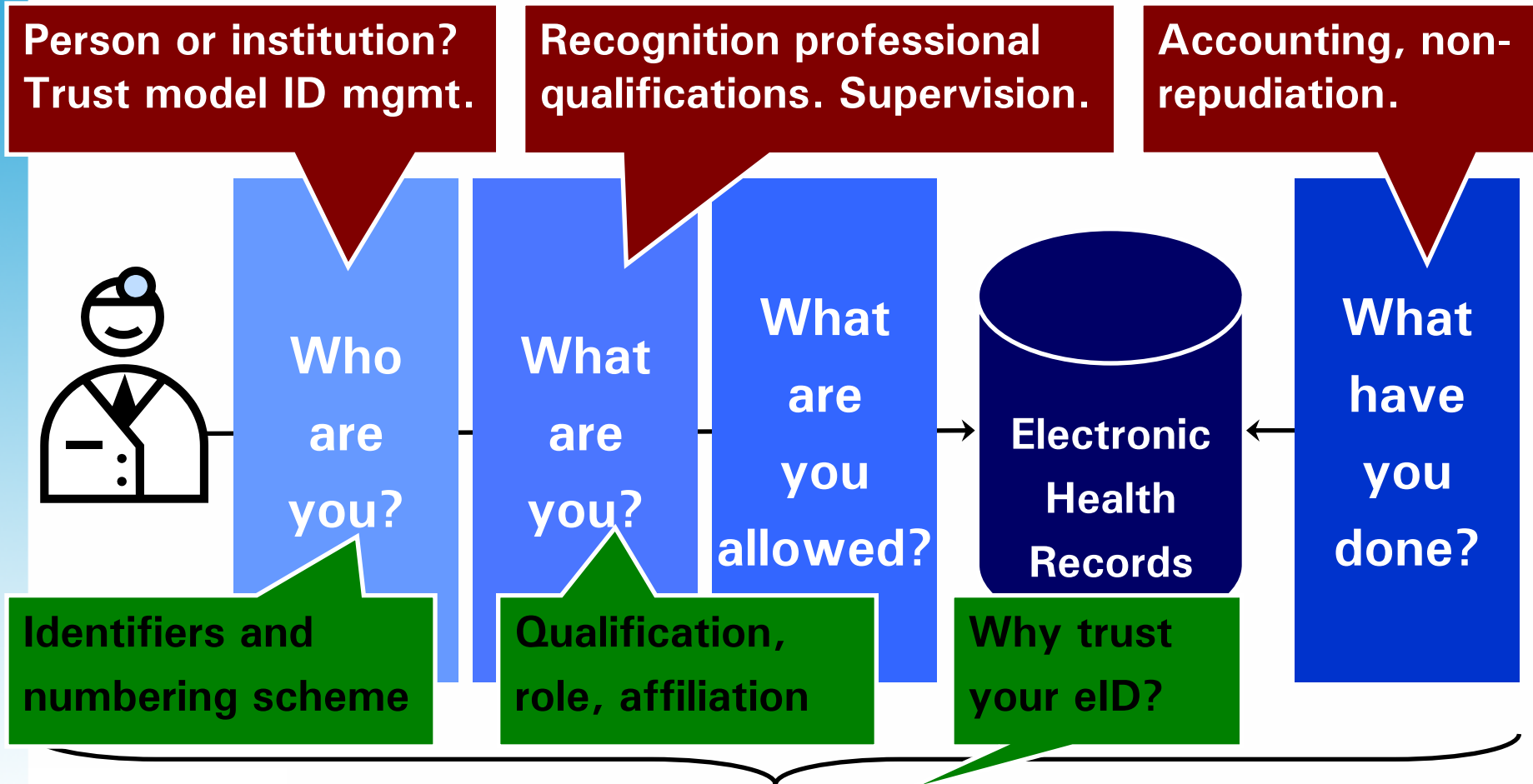
Interoperability / 4 action levels



WP3: Utilizing an Health eID



WP3/ID-Management: One Example

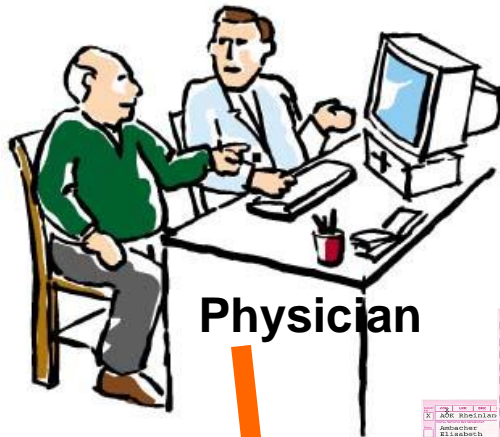


ePrescribing benefits expected

- Health policy focus: priority application for several Member States
 - improved patient safety
 - patient empowerment
 - considerable reduction in fraud
 - cost savings
(5 bn transactions/year in EU25)



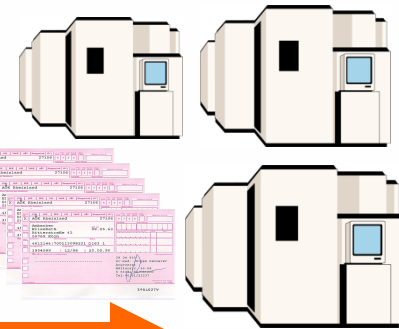
Paper Based Prescription



Physician



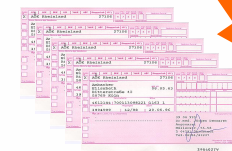
Pharmacy



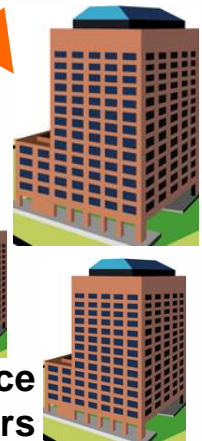
Billing/Statistics



Medicines



Health Insurance / Payers

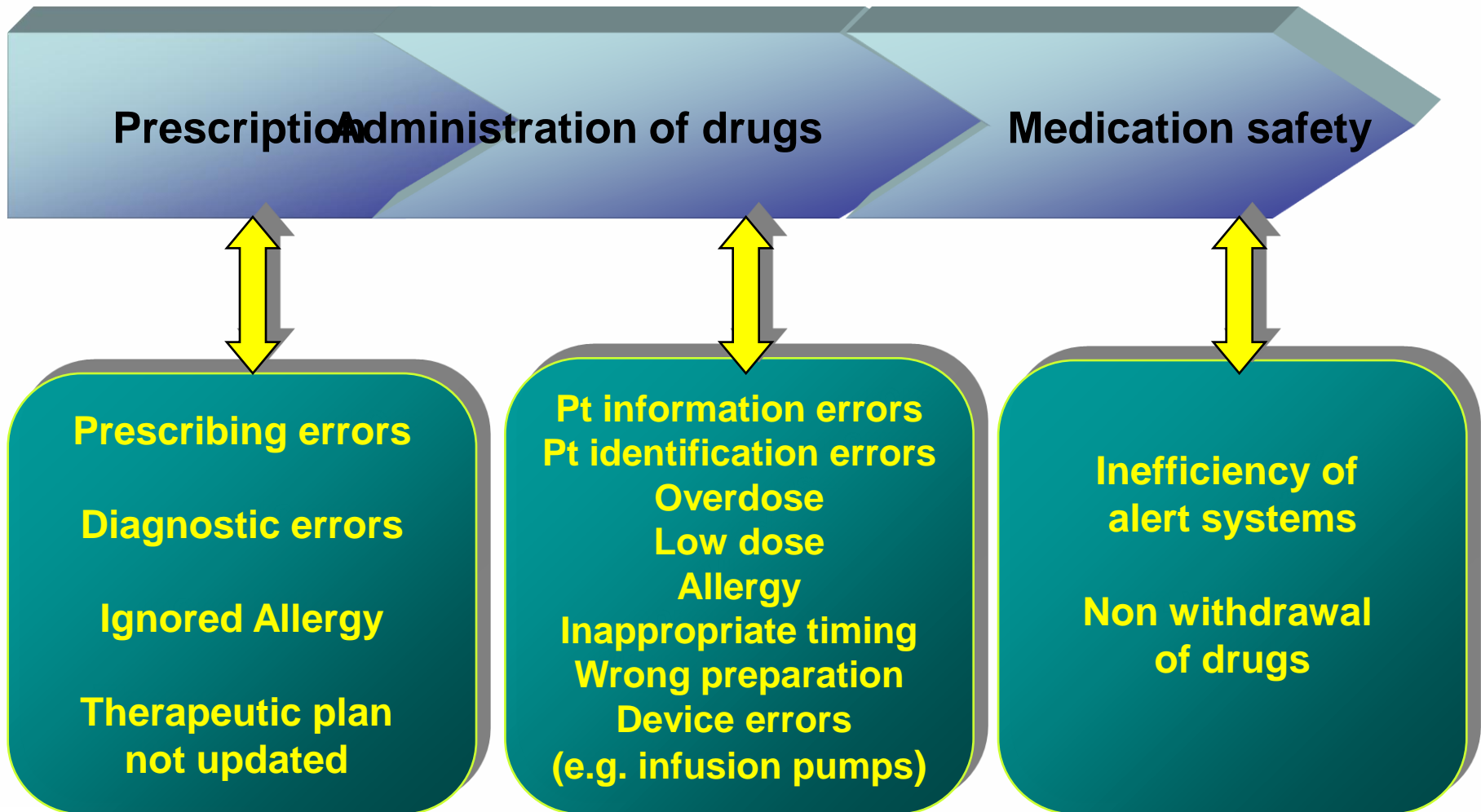


Patient

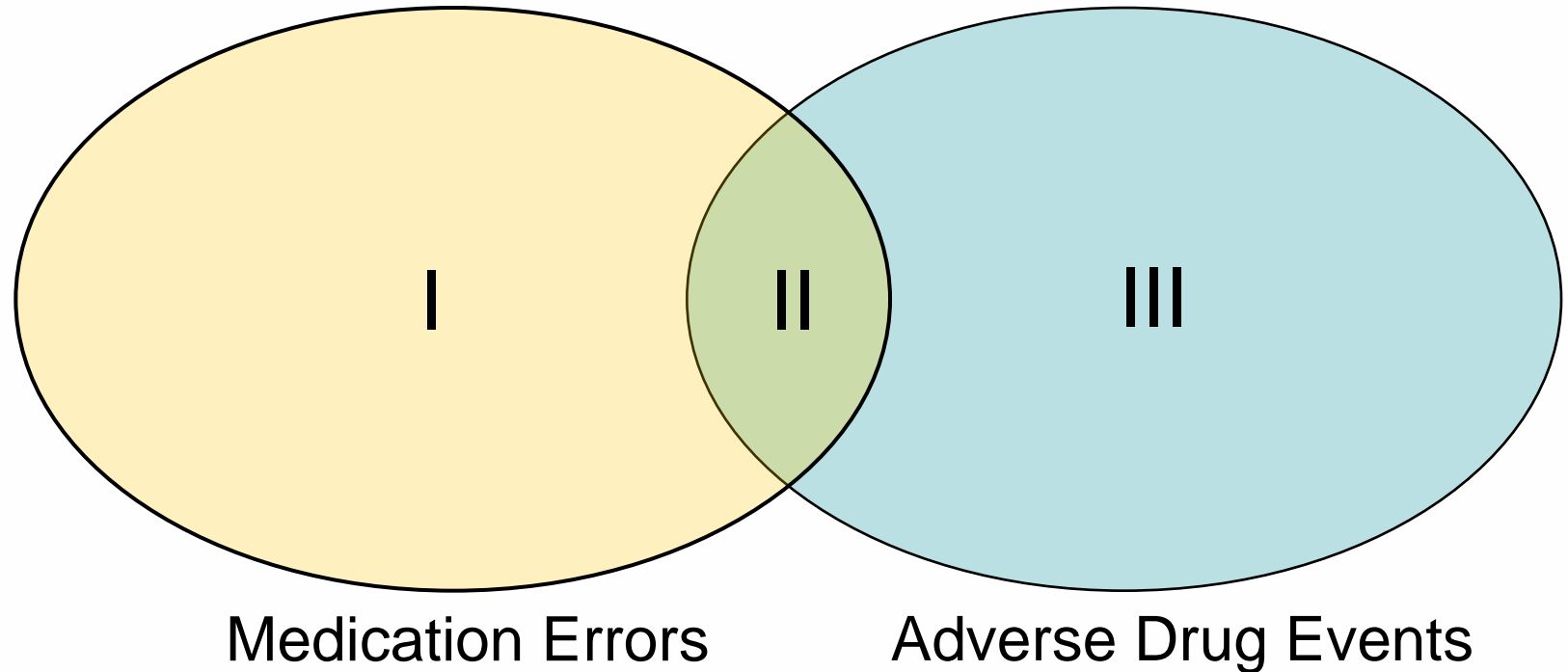
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| AMK | LMK | BKX | RKX | YAK | ABY | Verapapart | C |
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| AMK Rheinland 08.05.4 Ambacher Elisabeth Bitterstraße 42 50769 Köln 4612144 1700113098221 1162 1 3904999 12/98 20.05.96 39 04 999 Dr. med. Jürgen Demarec Auguststraße 56-58 D 44281 Düsseldorf Tel: (0212) 23227 3904027V | | | | | | | |

Prescription Form

Drug prescription errors

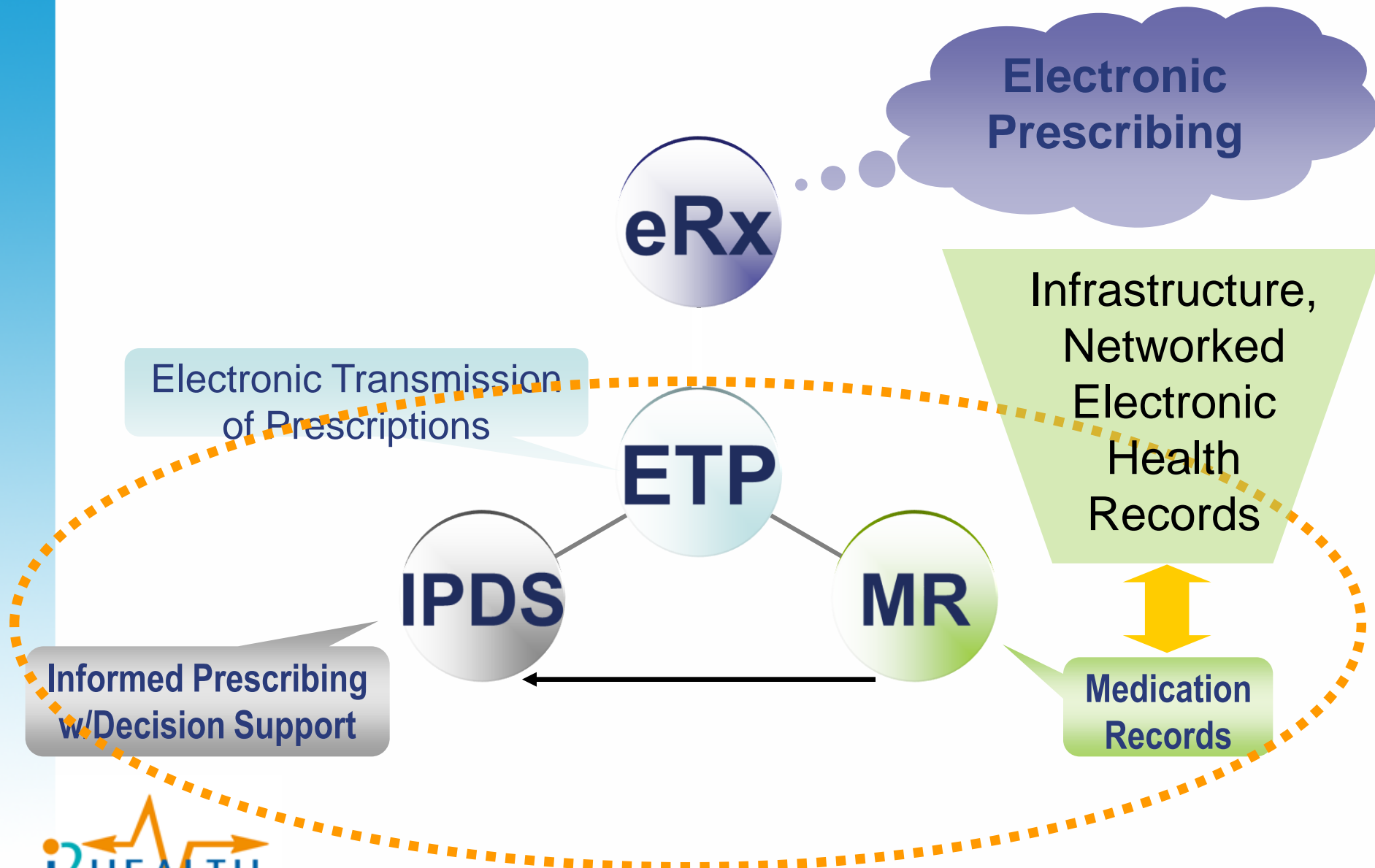


Reduce Medication Errors → ADE



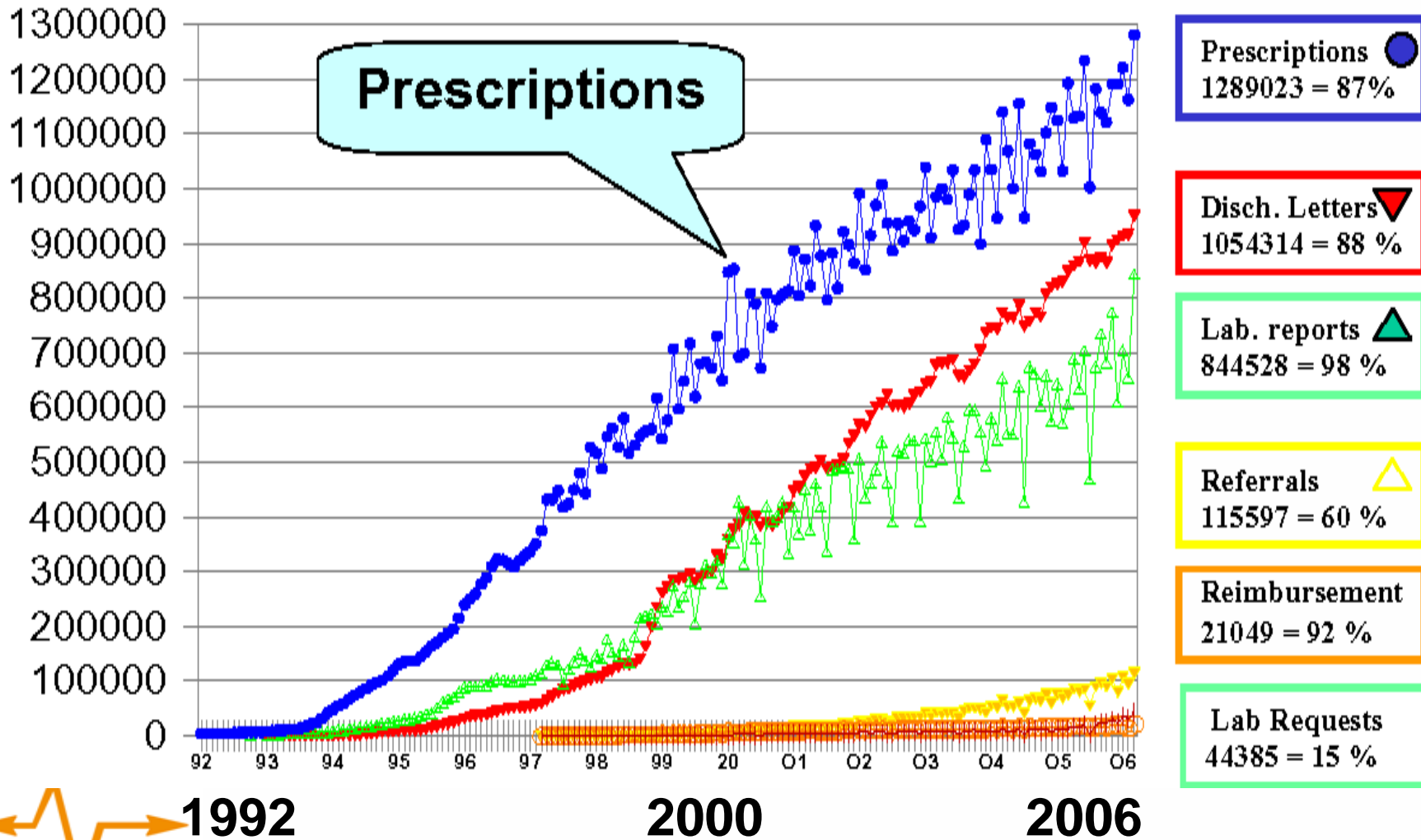
- I. Medication errors that do not result in patient harm
- II. Medication errors that result in patient harm.
- III. An adverse drug event that is not a result of a medication error.

ePrescribing: Group of Services



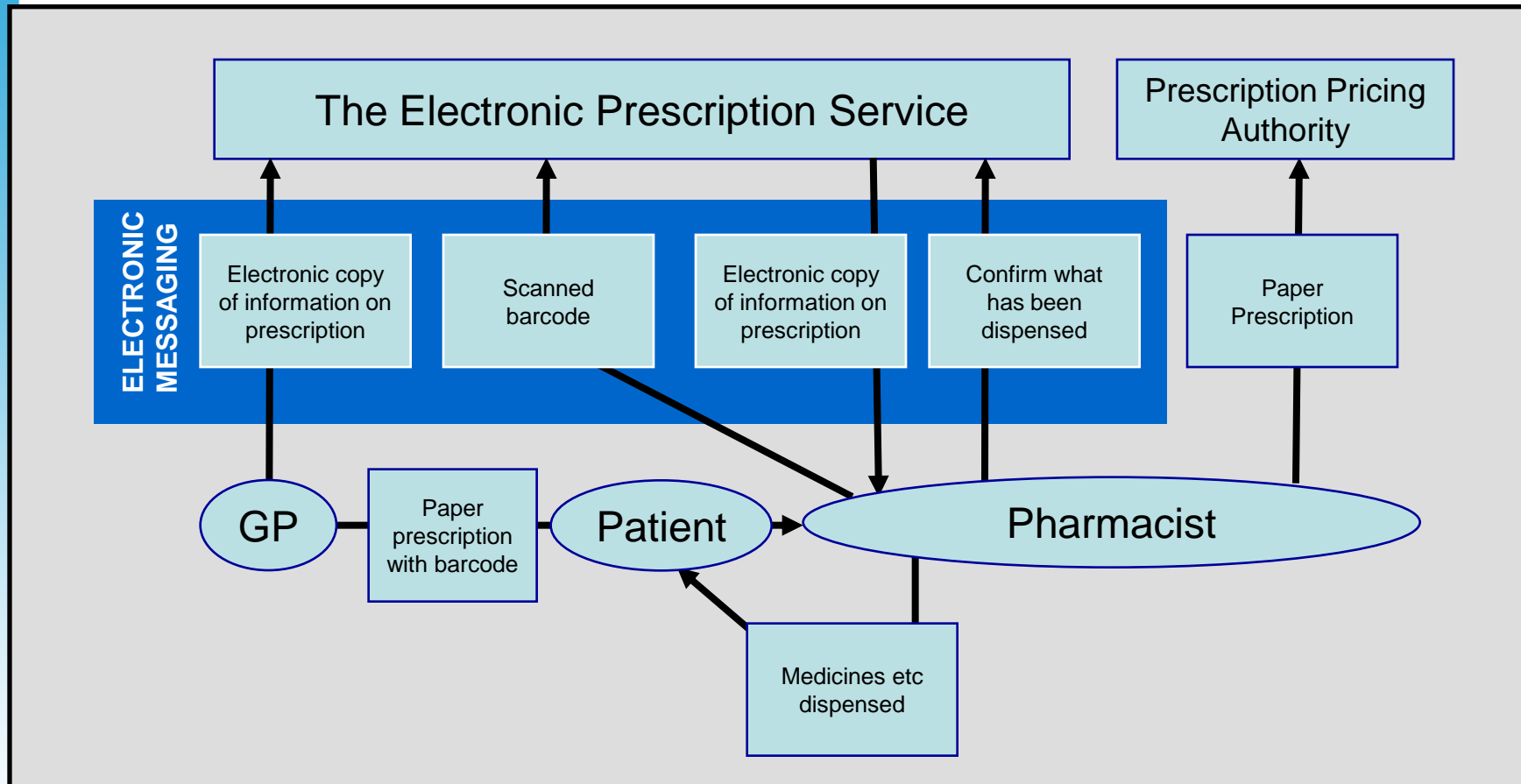
National Implementations

DK e-prescription: # / Month



National Implementations

UK: Connecting for Health



eRx Implementations EU

| | Denmark | Sweden | Germany | Slovenia | NHS Engl. | The Netherlands |
|------------------------------------|-----------------------------|---------------------------|--------------------------|---------------------------|----------------------------|---------------------------|
| Informed eRx with Decision Support | Implicit | n/a | System islands | Implicit | Plans | Pilots |
| Electronic Transfer of Prescript. | Fully established | Ca. 60 % | Offline Tests since 2007 | Plans | Roll out Phase 1 (Barcode) | In use for less then 20 % |
| Electronic Medication Record | National Database (09/2006) | National Database new eRx | Optional for Patients | Roll Out on HIC (06/2006) | Part of Spine | Roll out in 2008/09 |

i2-Health Interoperability Approach

Patient information in digital form must be at least as accessible and usable as paper based data

→ Meaningful exchange of medication data.

Political / Legal

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

Organisational

Medication Forms and Logistics, Dispensing, Reimbursement, Surveillance

Semantic

Naming (Generic/Product), Coding Schemes

Technical

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

eRx Interoperability Issues



○ 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)



i2-H Recommendations for the Implementation of ePrescribing



- Establish international standard formats for interoperable electronic prescription messages and interoperable medication records (medication profiles)



- Avoid a “digital Prescribing Babel” by safeguarding the semantic interoperability of all medication related information (substances, dosage etc.)

Core (e)Prescription Information

Prescription (of Medicines)

**Identifier:
Citizen/Patient**

**Identifier/Status
Reimbursement**

**Identifier/DigSig
Health Professional**

Trust

Medication
Rx 1
Rx 2
Rx N

Repeat Status
Med 1
Med 2
Med N

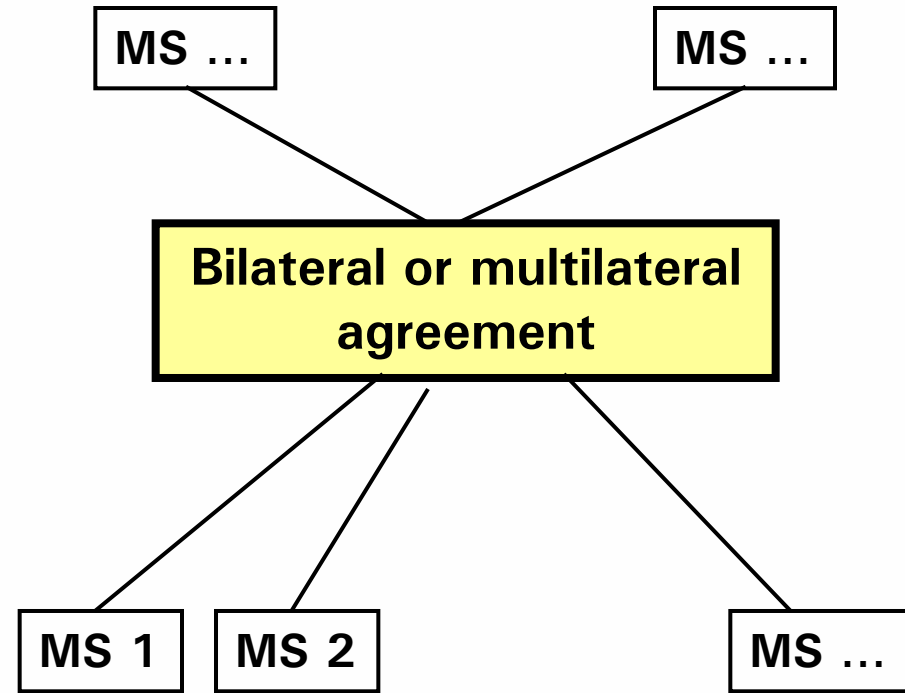
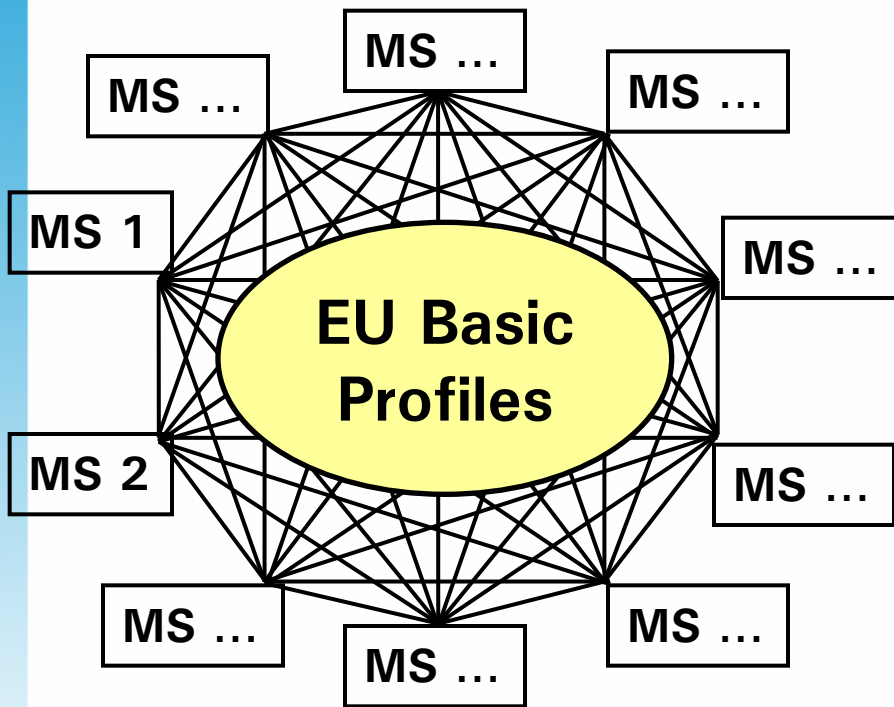
Instructions
Dose/TID 1
Dose/TID 2
Dose/TID N

Dispensation Information by Pharmacist
Dispensation 1-N

Trust

Invoicing Information
Reimbursement Claim

Jumping or Walking?



“A flexible approach would allow for setting up bilateral or multilateral agreements as well as using EU basic profiles”

European Health Telematics Association

- ▶ Focal Point for eHealth in Europe
 - Improving awareness and value perception of eHealth
 - Information exchange and discussion Forum for eHealth stakeholders
 - Informing and advising EU institutions and European organisations
 - Collaborate with and adding value to existing (potentially) eHealth related groups
 - Participating in debates, key issues and deployment approaches



EHTEL Stakeholder Forum for eHealth in Europe

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