

# e-Transformation Turkey at a Glance & Turkey's e-Health Approach

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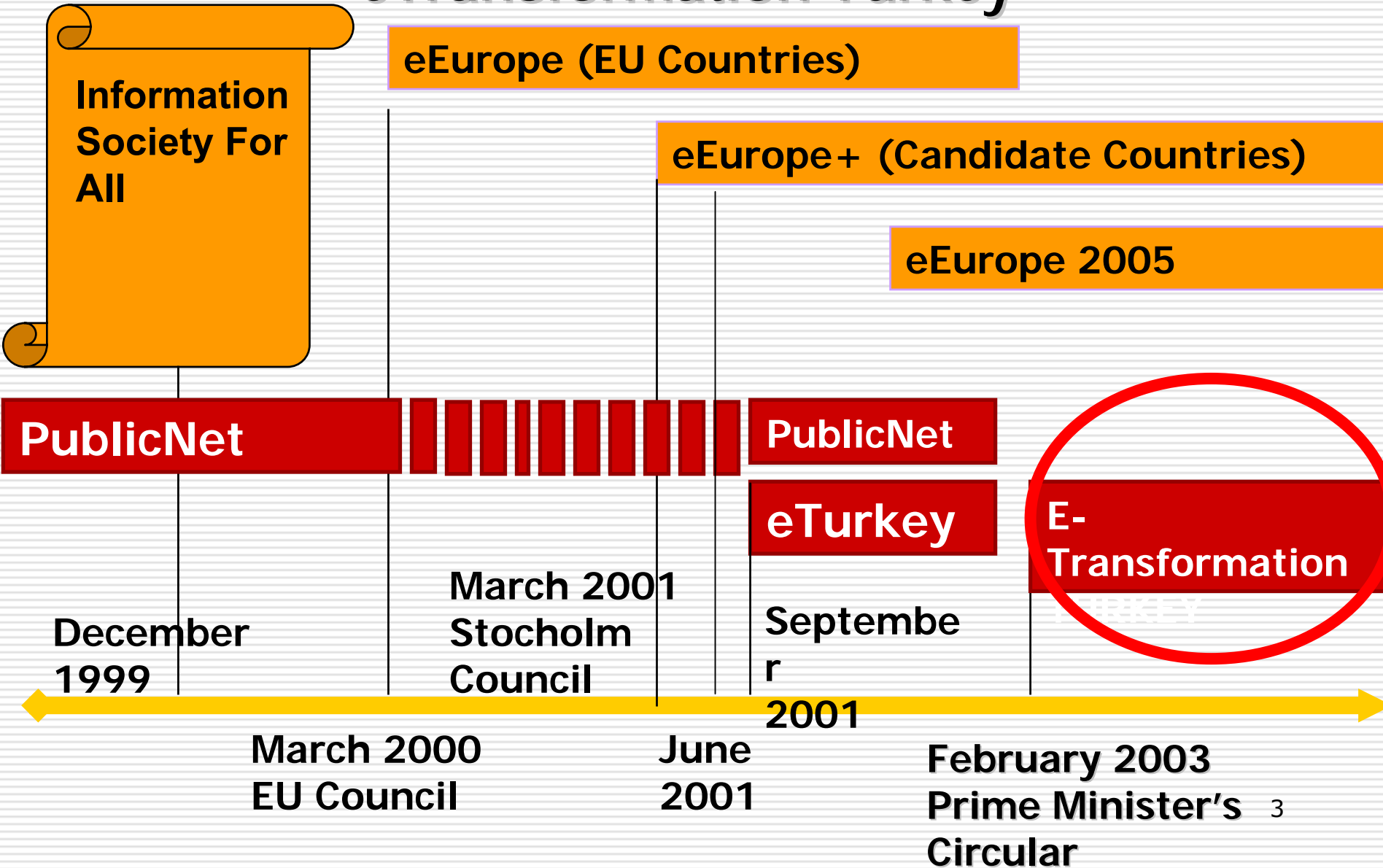
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Ministry of Health, Turkey

# Agenda

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- 👉 eTransformation Turkey
- 👉 Health Transformation Programme
- 👉 National Health Information System in Turkey

# eEurope – eTurkey eTransformation Turkey



# National Health Information System Studies

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- 👍 10 Working Groups Established in January 2003
    1. Action Plan Working Group, (Ministry of Health)
    2. Health Information Standards Working Group, (Turkish Medical Informatics Association)
    3. Health Identifier Working Group, (Ministry of Health)
    4. Minimum Health Data Set/Sets Working Group, (Hacettepe University)
    5. Security and Confidentiality of Health Related Data Working Group, (Turkish Medical Association)
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# National Health Information Studies

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6. (Early Warning Systems for Health Threats Working Group), Ministry of Health
7. Virtual Private Network for Healthcare Working Group, (Turkish Telecom)
8. Training Working Group, (Higher Education Committee)
9. Telemedicine Working Group, (The Scientific and Technical Research Council of Turkey)
10. Coordination and Monitoring Working Group, (State Planning Organization)

# National Health Information Studies

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- 👉 These working groups conducted the assessment of the current situation, projects, initiatives, and policy studies in their respective fields.
- 👉 NHIS Action Plan has been published in January 2004.

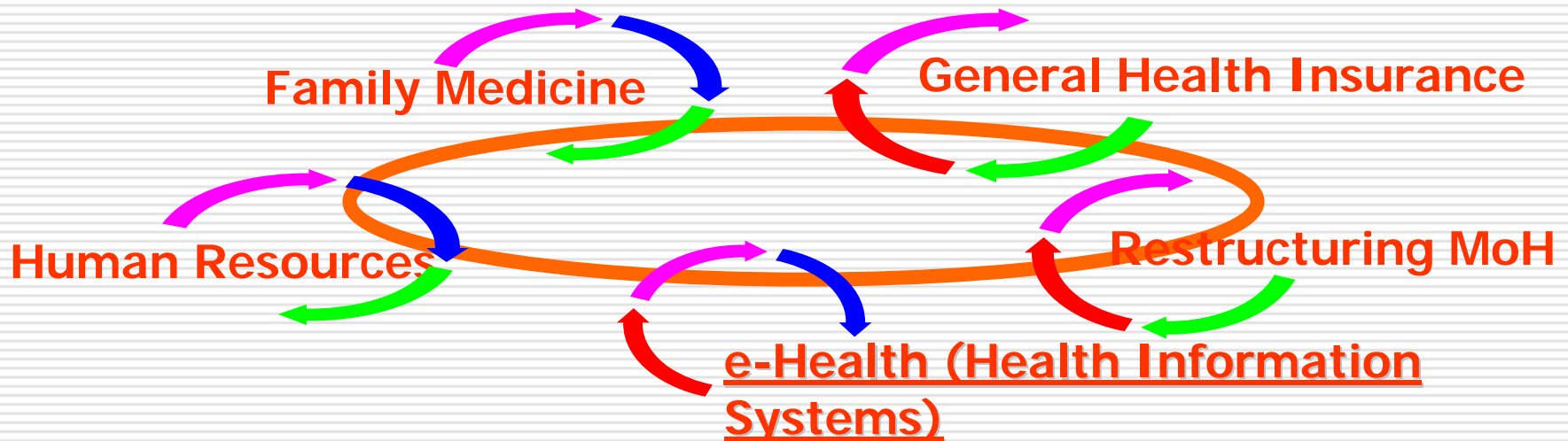
# e-Health Activities in the context of e-Transformation Turkey Project

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- 👉 e-Health Working Group established in the context of e-Transformation Turkey Project under the authority of SPO.
- 👉 15 actions determined on e-Health as basic building blocks of NHIS.
- 👉 Those actions mostly completed and evaluated by SPO.

# e-Health in Turkey as Part of the Health Transformation Programme

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# e-Health Vision

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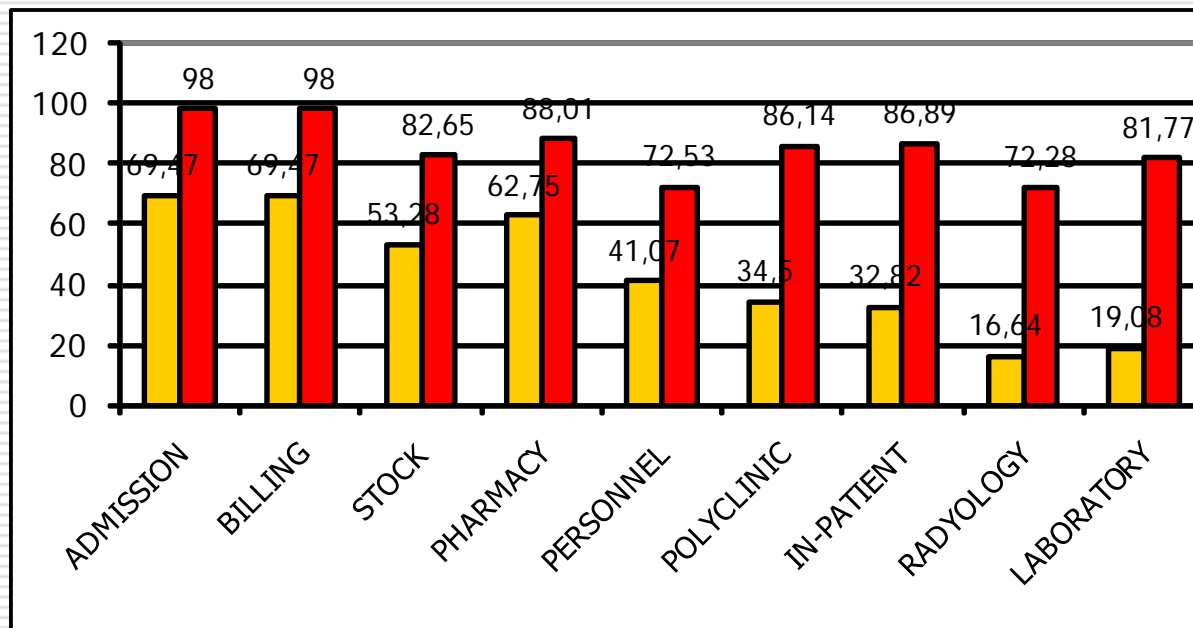
Improvement of healthcare services in Turkey by developing a Secure Health Information Platform that enables healthcare providers, health professionals and citizen, easy and safe access to health related information by using latest Information and Communication Technologies.


# Health Care Institutions in Turkey


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- 👉 Number of Hospitals: 1215  
(801 -MoH)
- 👉 Number of Health Centres: 6066
- 👉 Number of Village Health Station: 7676
- 👉 Number of Physicians: 97.763

## USAGE OF MODULES OF HMIS



 Year 2004

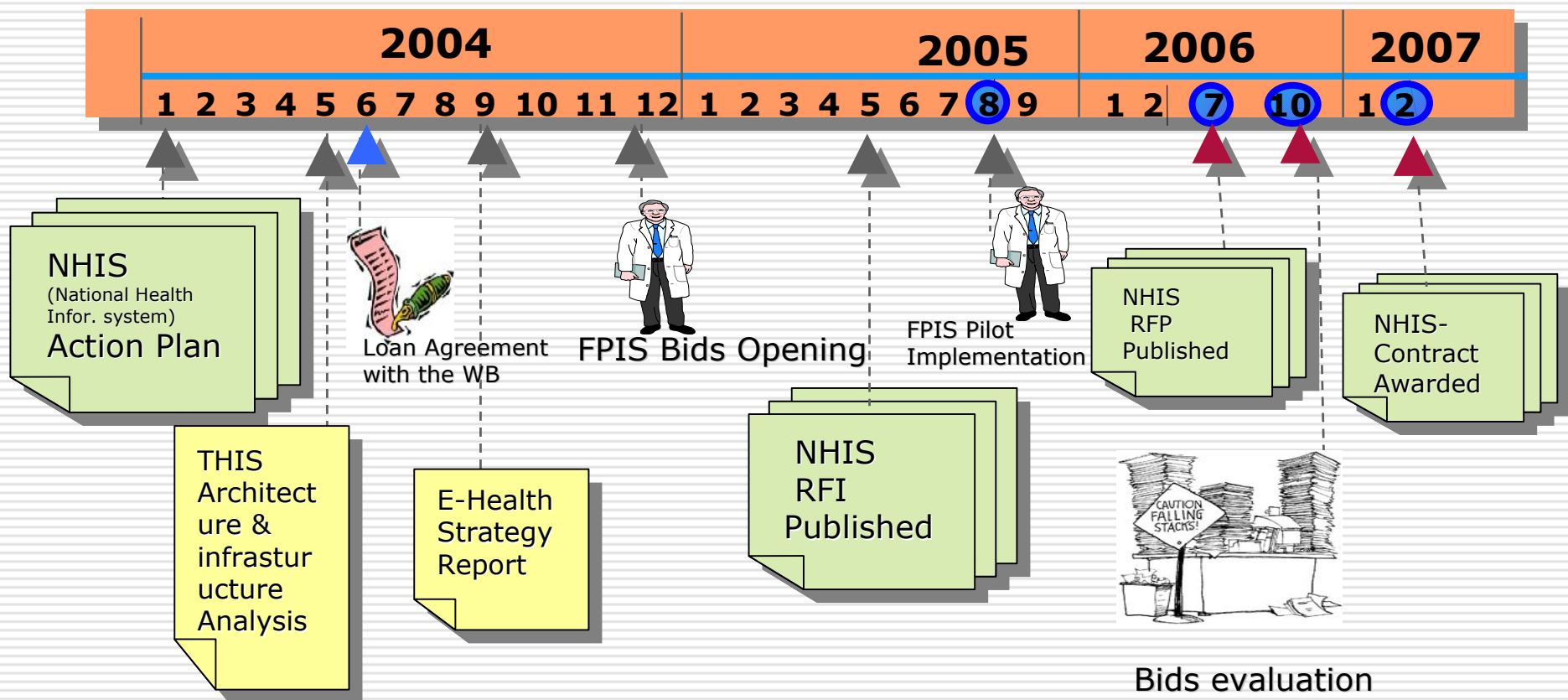
 Year 2006

# Coding and Classification Systems used by HMIS

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- 👍 **ICD-10** International Statistical Classification of Diseases and Related Health Problems, 10th Revision
- 👍 **DRG** (Diagnosis Related Groups)
- 👍 **ATC** Anatomic, Therapeutic, Chemical Classification System
- 👍 **EAN-13** Bar Code System
- 👍 **GMDN** Global Medical Device Nomenclature System
- 👍 **BUT** Budget Tariff

# History for Building National Health Information system



## OBJECTIVES OF NATIONAL HEALTH INFORMATION SYSTEMS



**PATIENT  
ORIENTED**



**CURRENT  
APPLICATIONS  
WILL BE SAVED**

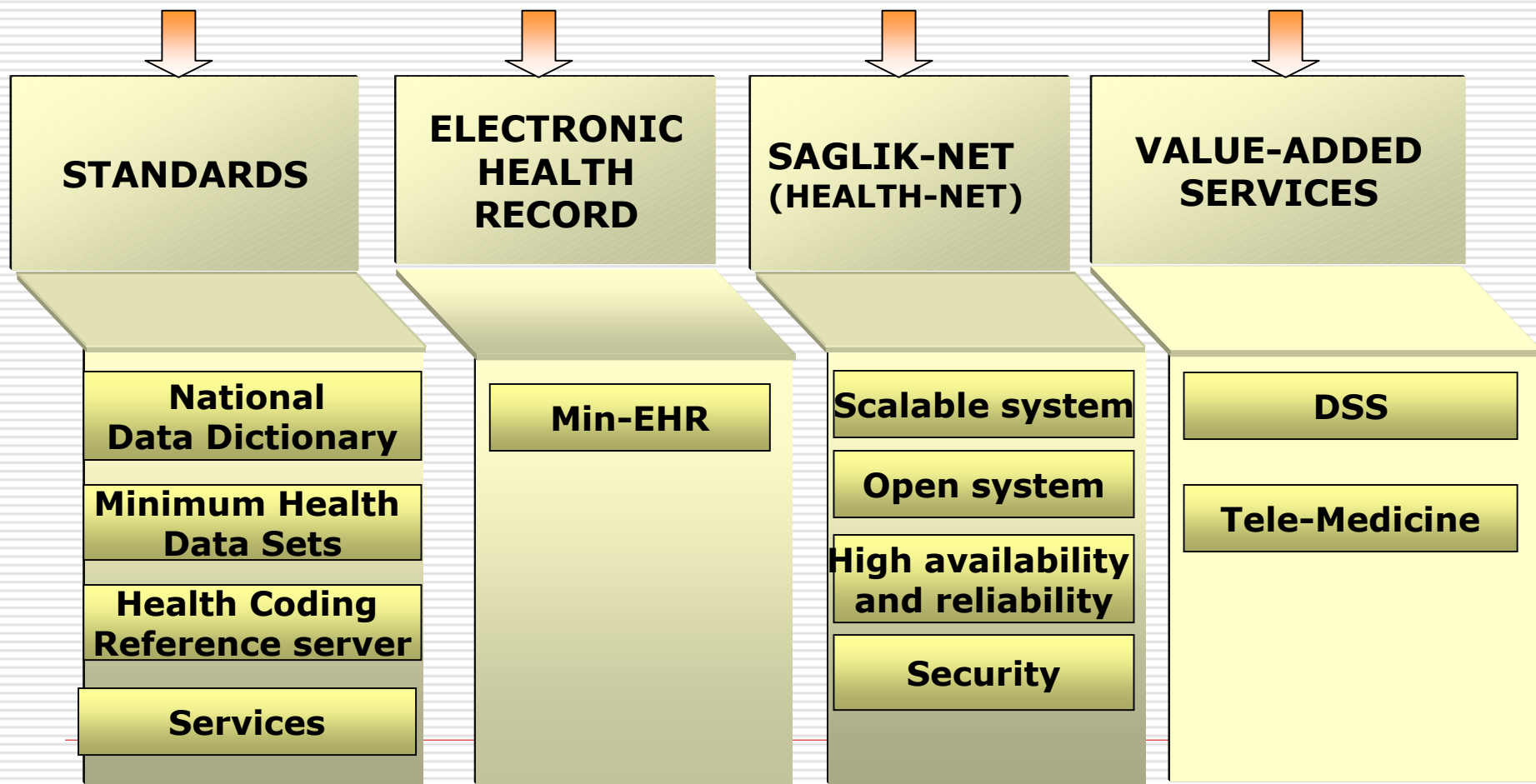


**TRANSPARENCY  
IN  
COMPETITION**

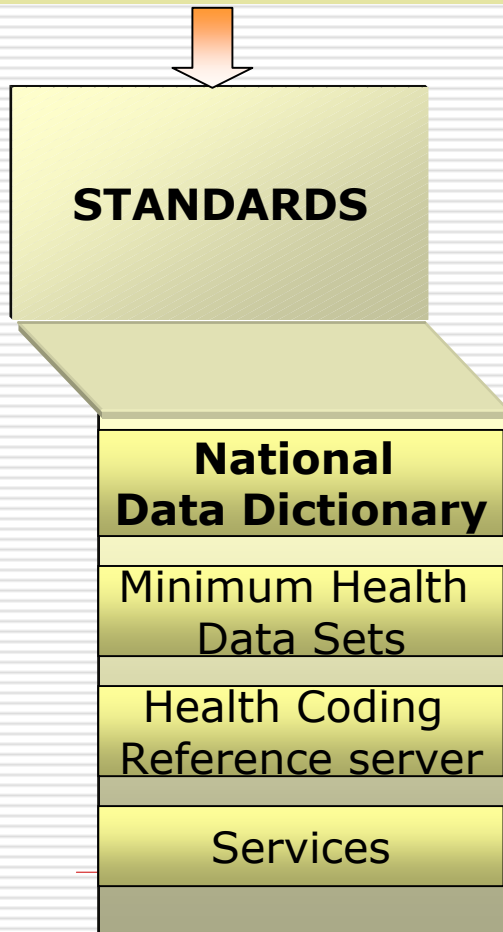


**INTEROPERABILITY**

# NATIONAL HEALTH INFORMATION SYSTEMS



# NATIONAL HEALTH INFORMATION SYSTEMS



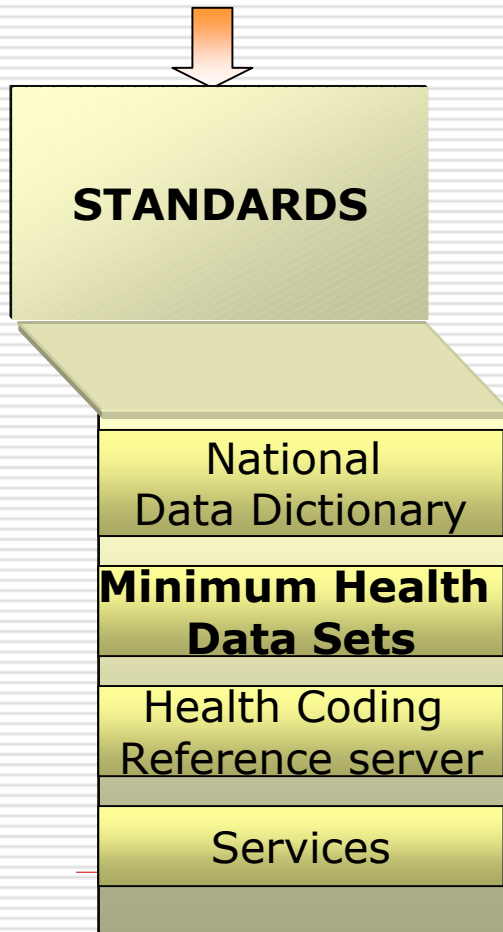
National Health Data Dictionary as one example of number of standards that have been developed by the MoH to ensure nationwide compatibility and semantic interoperability of health information systems in Turkey.

It defines all the data elements that is used in some forms according to the international standarts. A data element consist of;

- Identifying and definitional attributes
- Relational and representational attributes
- Administrative attributes

V 1.0 released on 15 June 2007.

# NATIONAL HEALTH INFORMATION SYSTEMS



Some of the data elements of NHDD grouped according to the specific needs of an institute. So, these group of data element forms minimum health data sets.

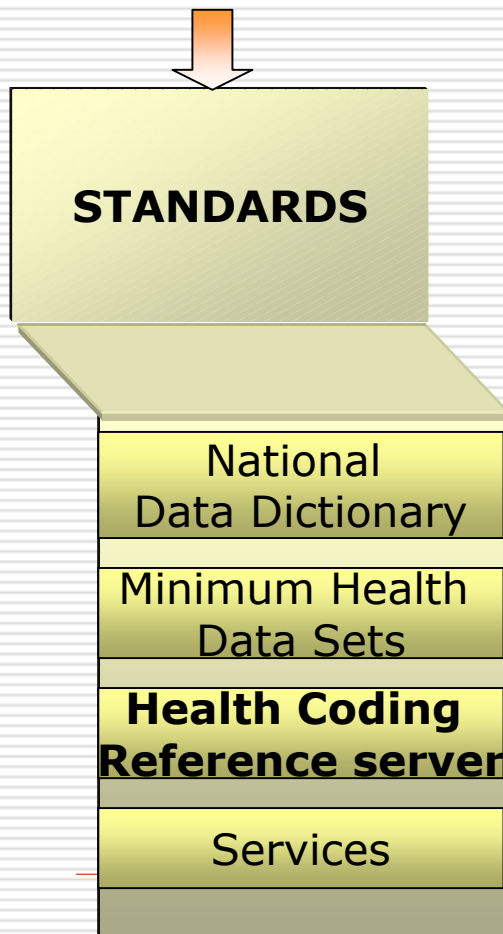
## **Primary Care (Family Physicians)**

- Patient Admission
- Examination
- Pregnant Observation
- Baby/Child Observation
- 15-49 age women Observation
- Death Declaration
- .....

## **Secondary Care**

- Polyclinic
- In-Patient
- Out-Patient
- Laboratory
- Cancer, diabestes
- ...

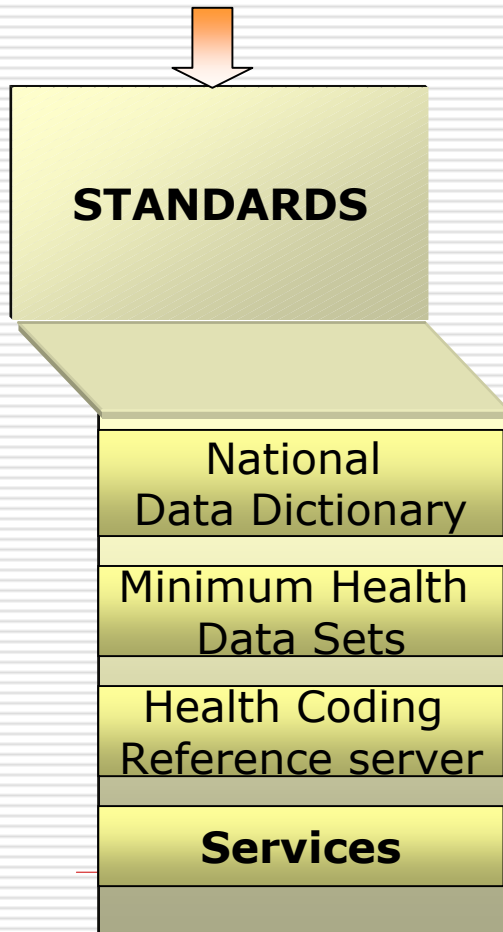
## NATIONAL HEALTH INFORMATION SYSTEMS



**It is a reference system that serves for all the coding and classification systems for the local and remote applications. It includes;**

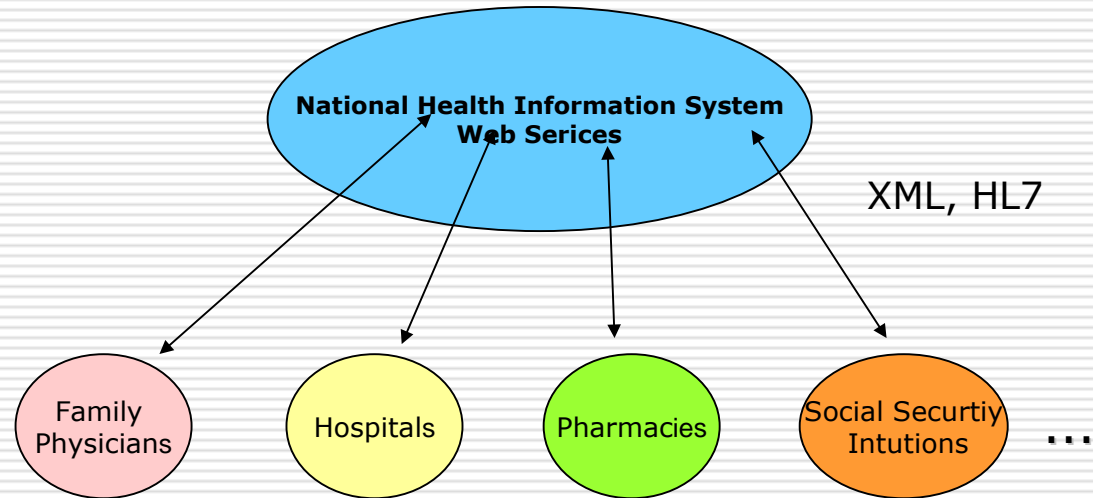
- Doctor Data Bank (Information for all the professional)
- Institute Codes
- Classification and diagnostic Codes (ICD-10, ICPC 2)
- Death Cause (ICD-10)
- Communicable Diseases (ICD-10)
- Drug Codes (ATC)
- Profession codes
- Vaccine Codes (HL7)

# NATIONAL HEALTH INFORMATION SYSTEMS



**All the services based on open standards**

- SOA (Service Oriented Architecture)
- HL7 V3 messaging standards (XML)



# NATIONAL HEALTH INFORMATION SYSTEMS



## ELECTRONIC HEALTH RECORD

### Min-EHR

### Electronic Health Records (Min-EHR):

- Establishment of a Electronic Health Records for the 70M people.
  - Currently electronic health record of 7.5 M patient have been recorded that Family Physician Information systems provides for Primary Care.
  - Family Physician system is available in 11 provinces and will be widened to whole country in two years.
  - EHR of the patients in the Secondary Health Care will be collected after end of the year 2007.
- 
- EHR information system based on HL7 RIM

# NATIONAL HEALTH INFORMATION SYSTEMS



## SAGLIK-NET (HEALTH-NET)

Scalable system

Open system

High availability  
and reliability

Security

## SAGLIK-NET:

The conversion of the existing LAN-WAN into a true **health network platform to be known as Sağlık-Net**, providing linkages, services and data repositories (e.g. minimum data sets of Electronic Health Records) to the all those authorized in the health sector.

**Saglik-Net is partially operational now.**

# NATIONAL HEALTH INFORMATION SYSTEMS



**SAĞLIK-NET**  
(HEALTH-NET)

Scalable system

Open system

High availability  
and reliability

**Security**

## Digital Security

- To provide Access control, Authentication, Confidentiality in e-health applications all the required actions is being taken.
- One of the major initiatives in that area is to provide smart cards for whole the population.
- A pilot study has been started under the umbrella of Information Society Strategy Action Plan . Health and Insurance sectors are determined for the first pilot implementation under the supervision of the TUBİTAK (Technical and Scientific Research Council).
- Pilot implementation will start for 10.000 patient, family physicians, and hospitals in one city for the first phase in september 2007
- For the second phase, it will be distributed the whole city which is approximately 300.000 people live in January 2008.
- For the third phase Government will make an action plan how to distribute to whole country.

### Smart Card Features:

- Smart cards will have biometric features such as finger prints
- Will replace currently used Identification Cards.
- Will hold emergency health data sets
- One unique number will be used for Identification (It is currently used by Health, social security and financial sector.)



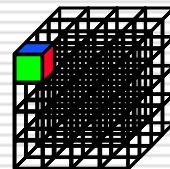
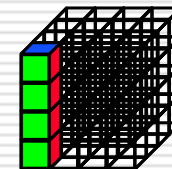
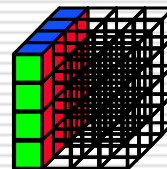
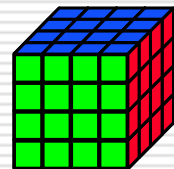
# NATIONAL HEALTH INFORMATION SYSTEMS

VALUE-ADDED SERVICES

DSS

Tele-Medicine

To provide advanced analysis of the health sector Decision support Systems will be established, which will be based on EHR database.



Data

Information

Decision

Management

# NATIONAL HEALTH INFORMATION SYSTEMS



## VALUE-ADDED SERVICES

DSS

**Tele-Medicine**

- Health services will be provided remotely by using information and communication technologies.

The objective of the project;

- To solve problem of lack of experts, especially in the eastern part of Turkey
- Use of the knowledge and experience of experts
- Increased possibility of correct interpretation of the examination results
- Greater comfort for the patient – no need to travel
- Educational significance – a database for research and scientific purposes

# NATIONAL HEALTH INFORMATION SYSTEMS

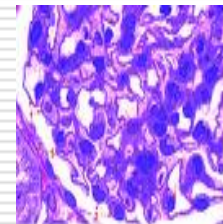
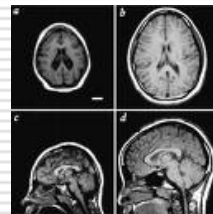
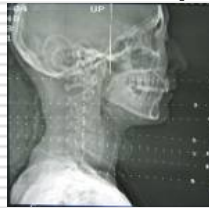


## VALUE-ADDED SERVICES

DSS

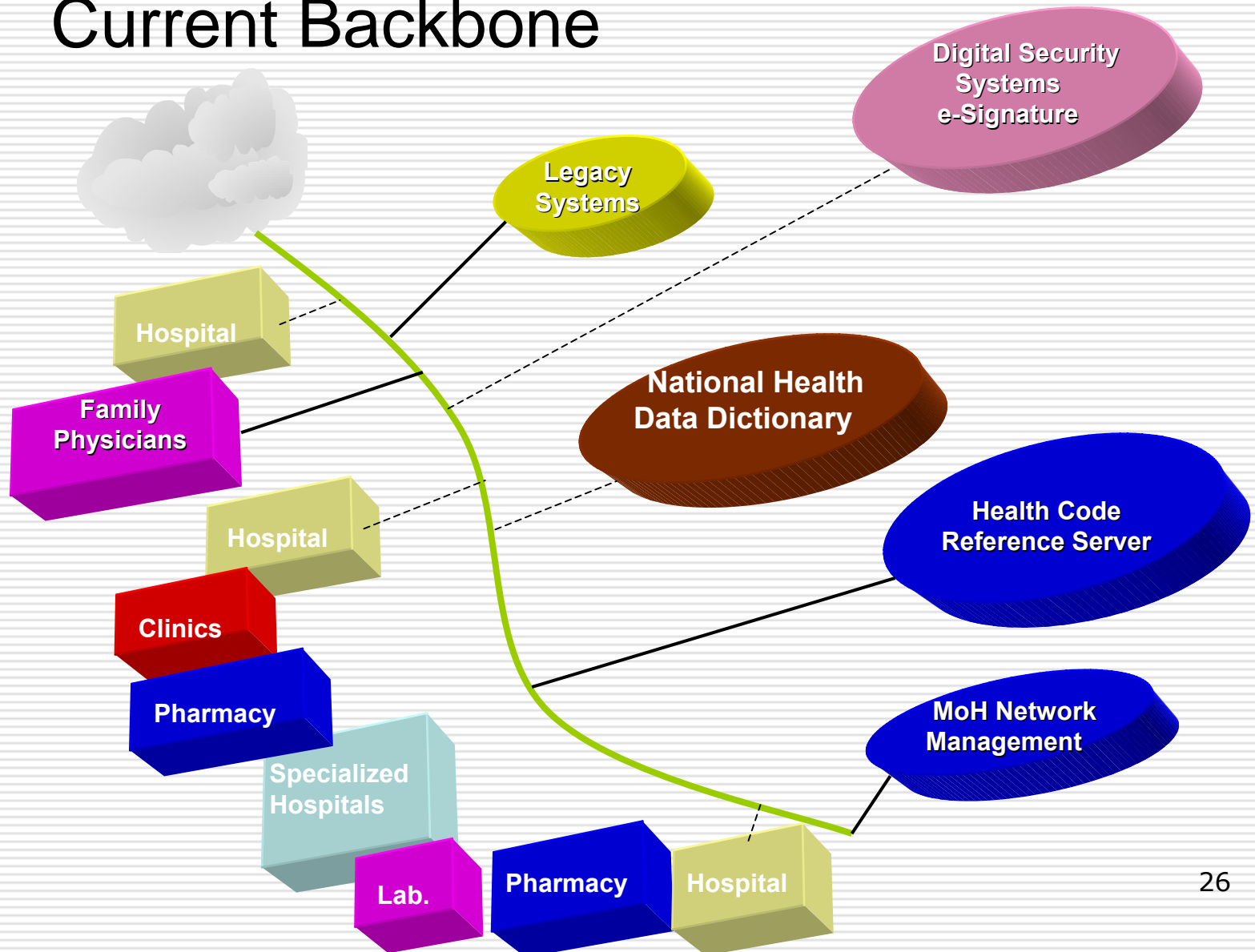
Tele-Medicine

- Tele-radiology and tele-patolog services will be provided at first.
- 9 sending and 5 receiving pilot hospitals have been defined.
- The Bid will be opened in July 2007 and will be operational by the end of year 2007



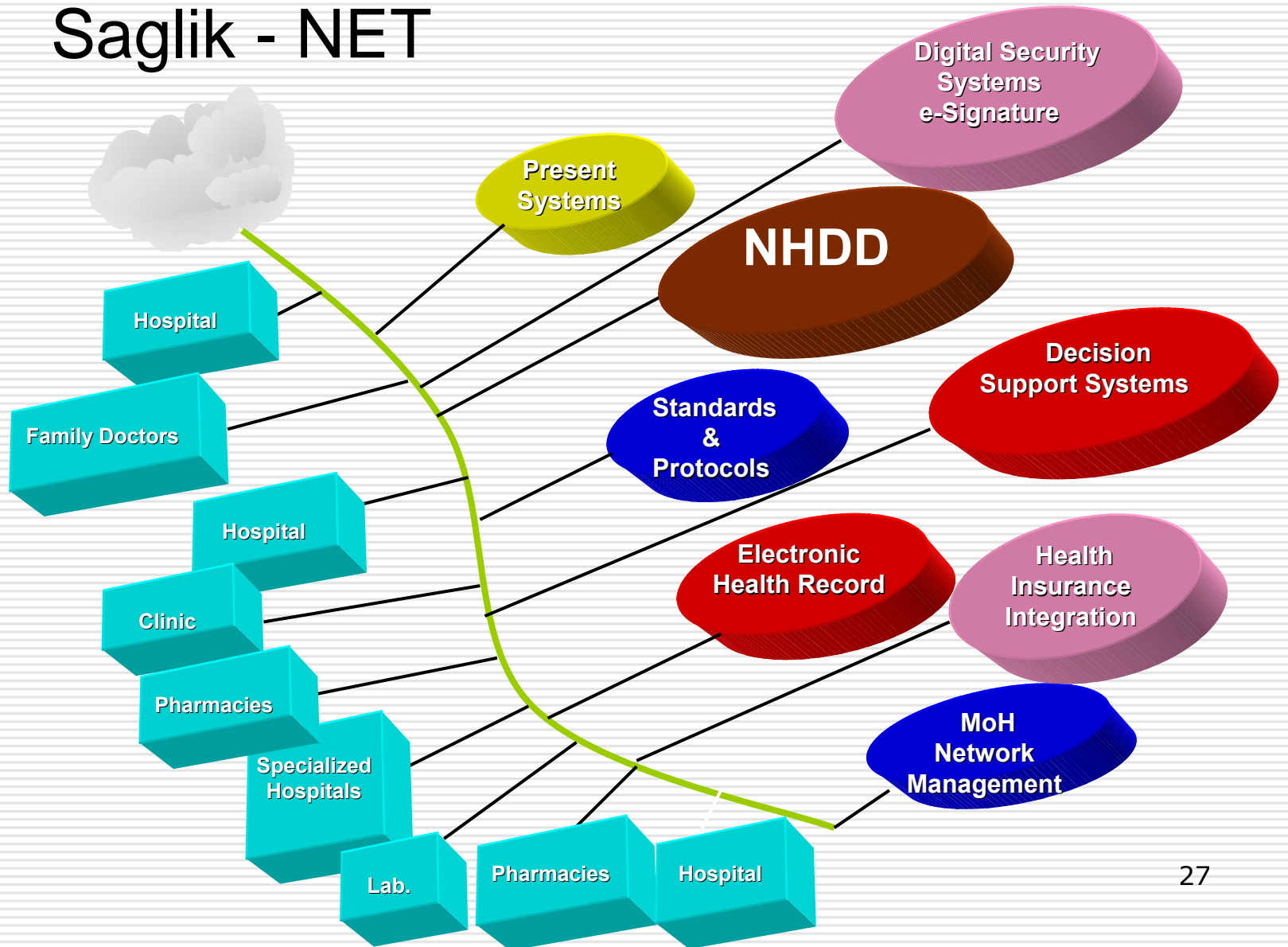
# Health Information Platform

## Current Backbone



# Target

## Saglik - NET



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Thank you for your attention\*\*\*

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