

National Health Information Infrastructure in Korea

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Contents

◆ Current Status of HIT in Korea

◆ NHII in Korea

- NHII vision & building blocks
- Strategies
- Major Projects for NHII
- Implementation Structure
- Several Issues

◆ Conclusion

Current Status of HIT in Korea

Facts about Korea (2004)

- ◆ Population: 48 million

Over 65 yr rate: 9.1%('05), 14%('18)

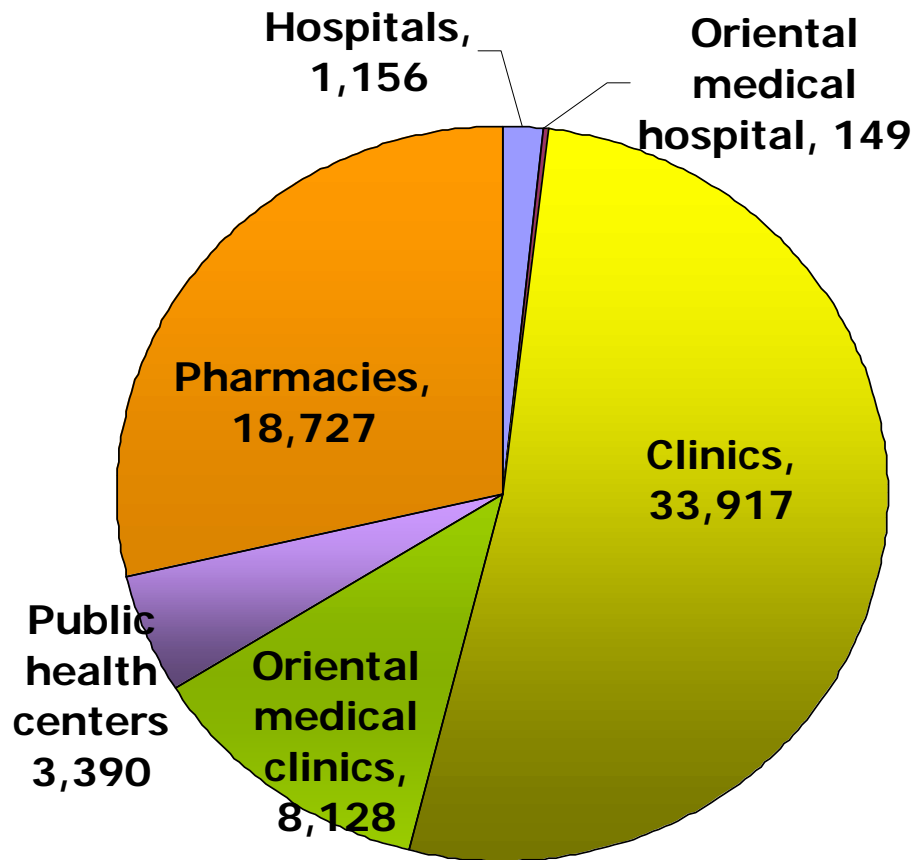
- ◆ Area : 98,480Km²

- ◆ GDP per capita: \$19,200

- ◆ Life Expectancy: 75.8 yr

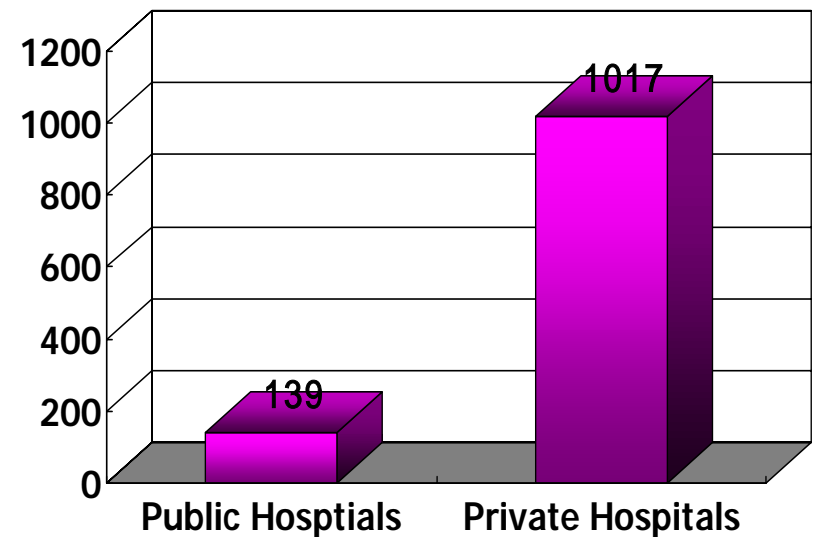
- ◆ Health Expenditure: 5.9% of GDP

Healthcare Institutions



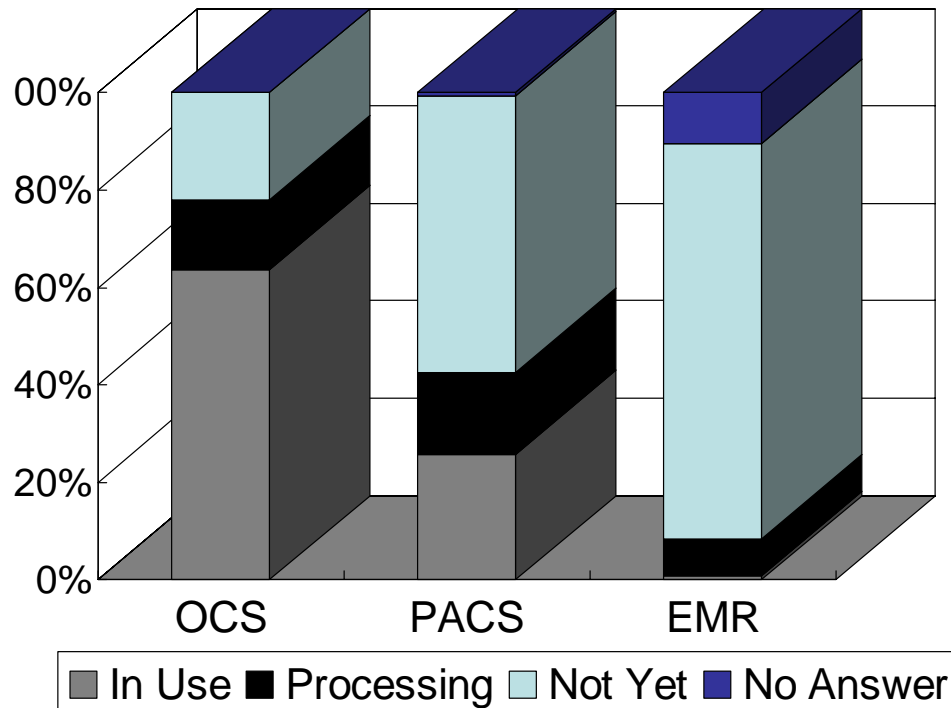
- ◆ Public Hospitals: 12%
- ◆ Private Hospitals: 88%

No. of Public & Private Hospitals

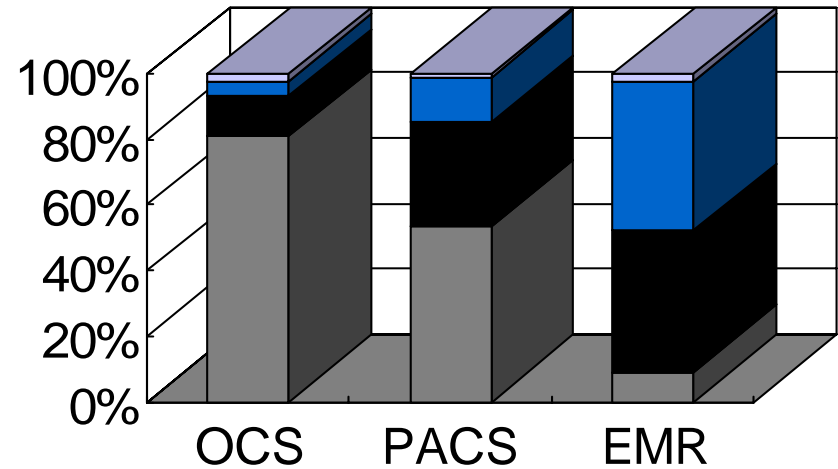


Hospital Information System in Korea

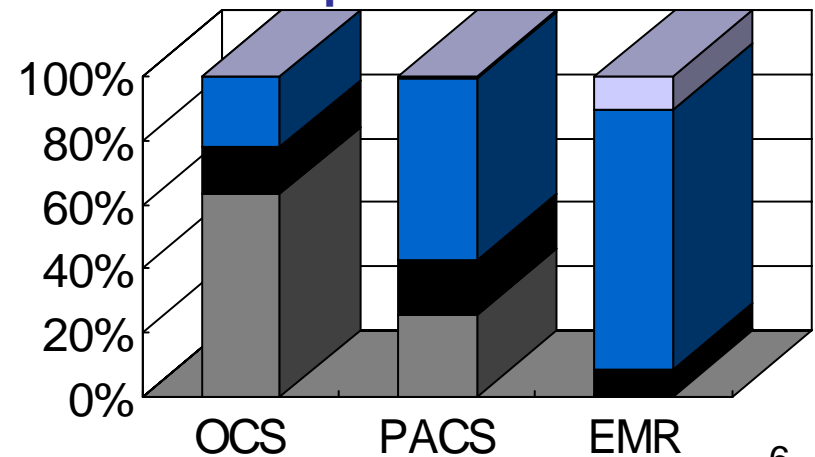
Hospitals, Total



Hospitals 500 beds



Hospitals <500 beds



NHII in Korea

Driving Forces for KNHII

◆ Quality of Care

- ◆ Medical error rates: 90,000 persons/Yr. (USA)
- ◆ Inconsistency of quality of care

◆ Healthcare Expenditure

- ◆ Escalating costs
- ◆ Aging population and new technologies

◆ Technology

- ◆ Fusion technologies: IT, BT, NT
- ◆ C&C, Modalities

◆ Consumerism

- ◆ Transparency, self-assessment

Requirements - Consumer

- ◆ Integrated and seamless healthcare services
- ◆ Access to consumer's own records
- ◆ Appropriate information for consumer's health status
- ◆ Monitoring and education for chronic disease patients
- ◆ Privacy and Confidentiality

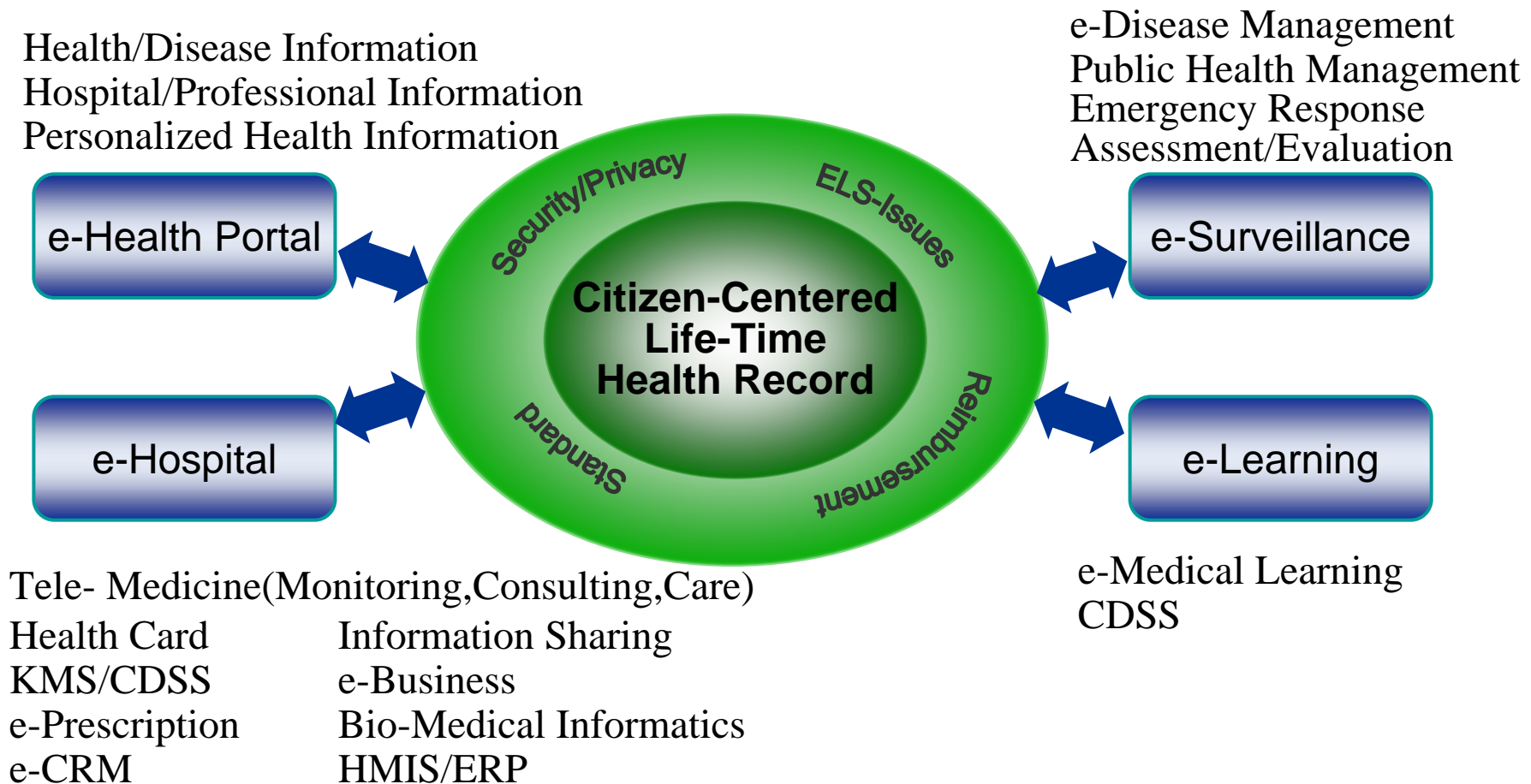
Requirements - Provider

- ◆ More complete and accurate patient data on the spot
- ◆ Up-to-date information of medical technologies
- ◆ Clinical decision support systems
- ◆ Efficient medical devices using IT, BT & NT

Requirements – Public/National

- ◆ Population-based health data to improve public health practice
- ◆ Wide range of information essential to monitor and protect the public's health
- ◆ Interoperability of information system
- ◆ Settlement of ethical, legal and social issues
- ◆ Reduction of national health expenditure

e-Health Services



History of NHII in Korea

- ◆ Dec. '04: National Health Information Standard Committee (NHISC) was launched under Ministry of Health & Welfare (MOHW)
- ◆ Sep. '05: MOHW declared to implement interoperable EHRs for public sectors by 2010
- ◆ Dec. '05: National e-Health Committee was launched

KNHII Vision

“Anywhere, anytime access to healthcare information and decision support in secure way to improve the quality, safety and efficiency of health care”

“Ministry of Health & Welfare will implement interoperable EHRs for public hospitals and public health institutions by 2010”

- Ministry of Health & Welfare, Sep. 2005

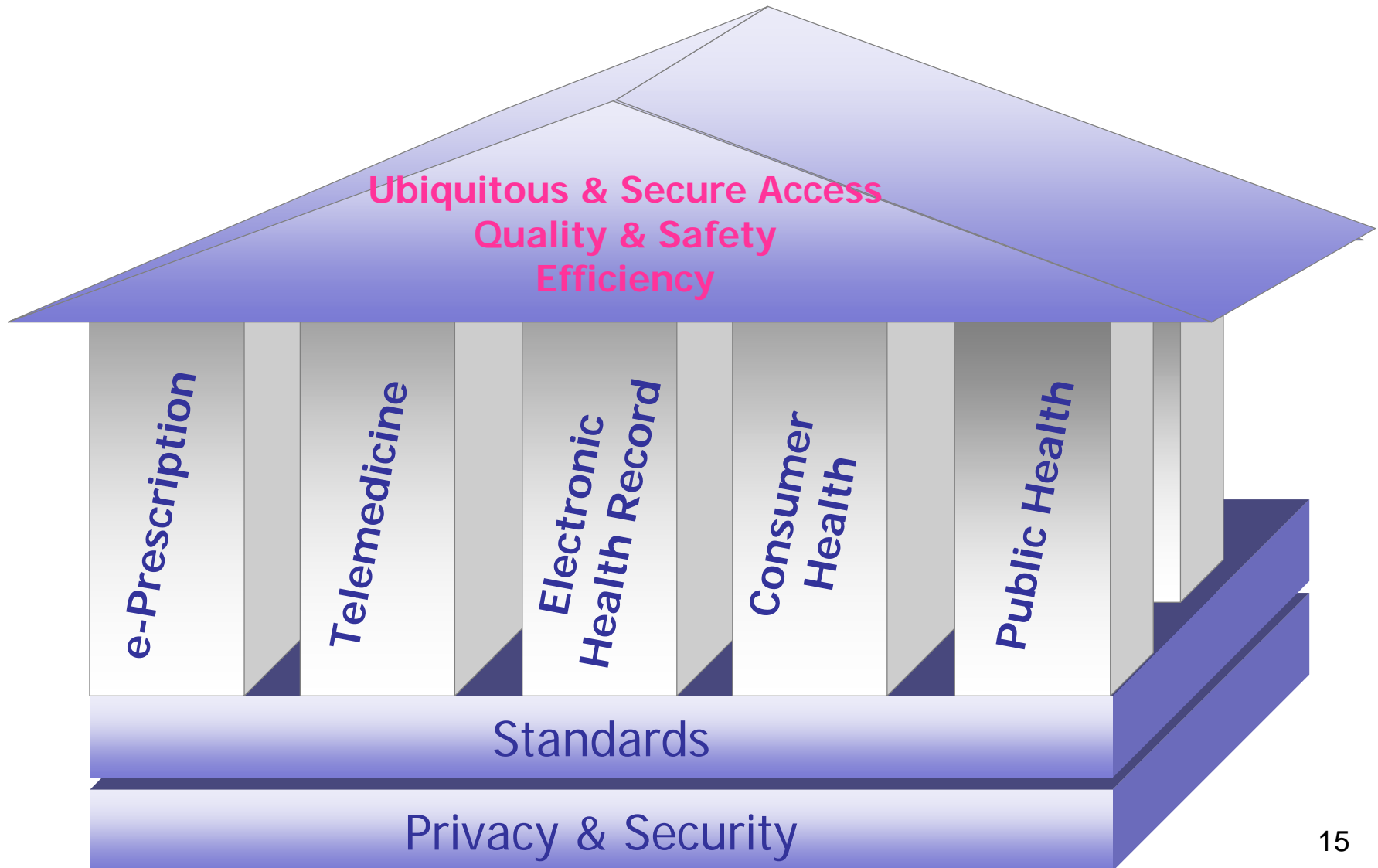
Ubiquitous Access

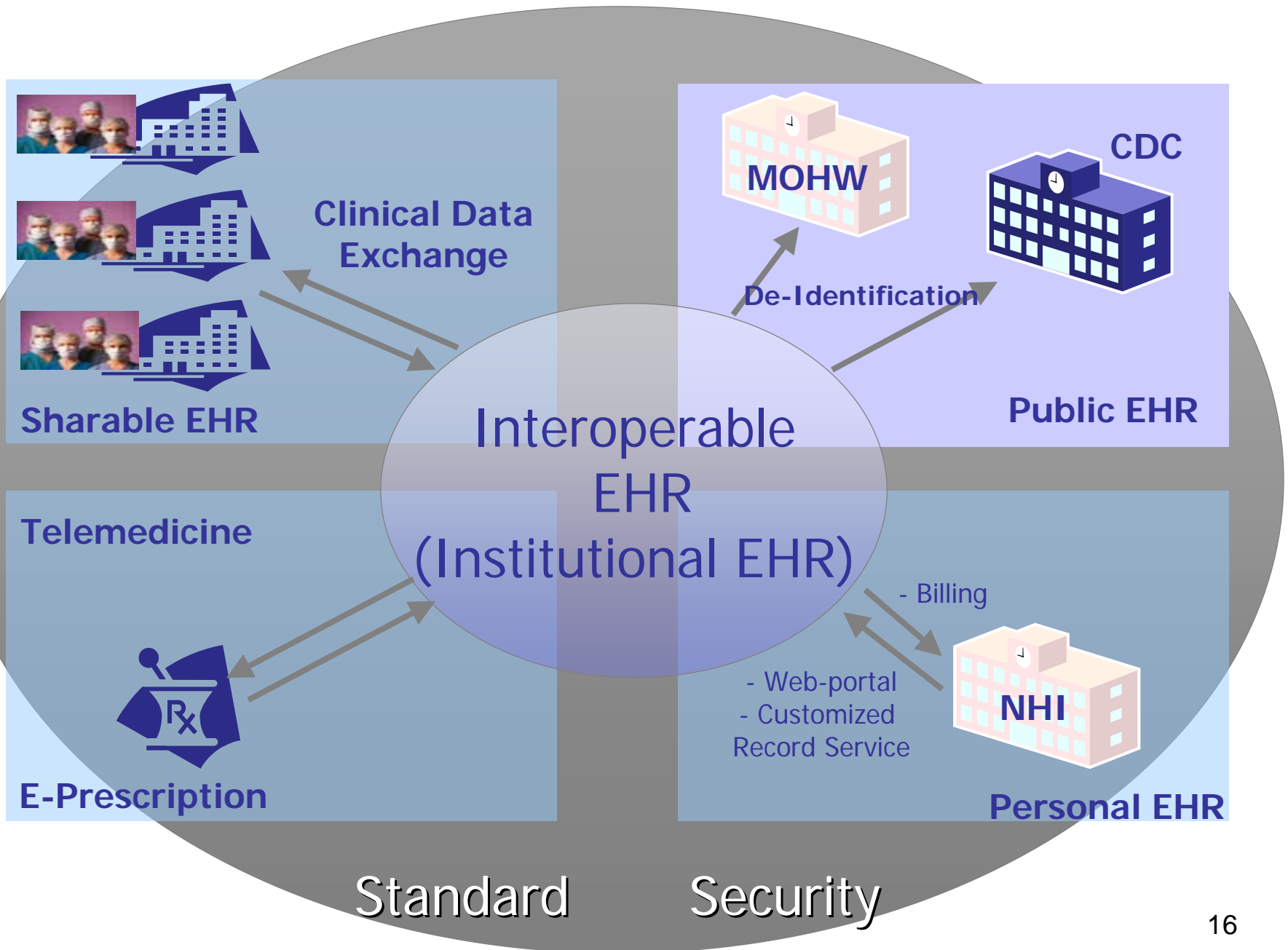
Secure Access

Quality & Safety

Efficiency

KNHII Building Blocks

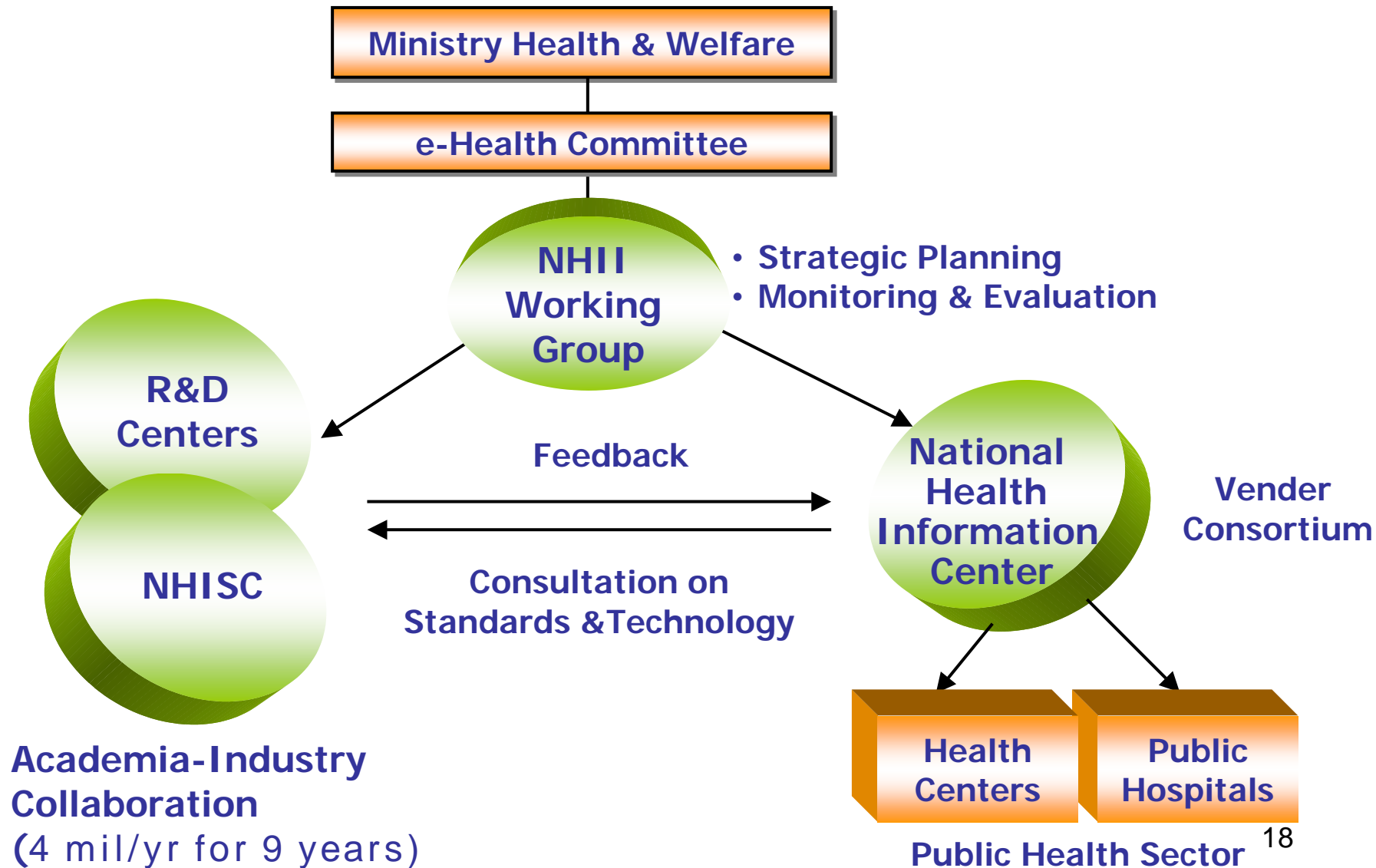




KNHII Strategies

- ◆ Patients' control of information
 - Based consent of patients
 - Concern over privacy and security
- ◆ Incremental approach
 - Develop and validate interoperable EHR from public sectors
 - Facilitate EHR adoption in private sectors
 - Through provision of low interest loan or differential fee schedule
- ◆ Ensure participation of stakeholders
 - Consumers, health care, industry, experts
- ◆ Harmonization & collaboration with international health standards

KNHII Implementation Structure



KNHII Implementation Structure :

Supporting Functions

◆ E-Health Committee

- Established in Oct. 2005
- Composed of 6 working groups
 - EHR dissemination, Standardization, Tele-medicine, Public health, Consumer health, ELSI
- Strategic planning for KNHII
- Monitoring and evaluation

◆ NHISC (National Health Information Standard Committee)

- Established in Dec. 2004
- Composed of 13 subcommittees and one steering committee
 - Focused on development of vocabulary standards for EHR

KNHII Implementation Structure :

Supporting Functions

◆ National Health Information Center

- Support implementation of EHR for public sectors
 - NHII working group
 - NHII implementation T/F: users, experts, vendors
- Manage clinical data repository for public health centers/subcenters & public hospitals
- Support development of health information standards
- Maintain & disseminate standards

KNHII Projects Currently under Progress: Strategic Planning

◆ Planning

- Led by e-Health committee and 6 working groups
- EHR dissemination, Standardization, Tele-medicine, Public health, Consumer health, ELSI
- 5 year plan
- -'05.12 Comprehensive plan
- -'06.06 Detail plan

◆ Act for Healthcare Informatization Promotion and Privacy

- -'05.12 Prepare a draft of the act
- -'06.06 Make consensus of stakeholders and legalize

KNHII Projects Currently under Progress: Standardization

◆ Focused on vocabulary standards

Vocabulary Standards

Clinical Vocabulary (UMLS, SNOMED)	Diagnosis (ICD-10KM)	Procedure (ICD-9CM)	Laboratory (LOINC)	Public Health
Nursing (ICNP)	Medical Materials	Oriental Medicine	Pharmacy	Health Statistics

Messaging Standards:
HL7 v2.x
HL7 v.3 CDA

Privacy & Security

KNHII Projects Currently under Progress: Standardization

◆ Phase 1: (04-05)

- Development of data dictionary to support development of ambulatory EHR (Comprehensive public health center information system)
- Simple collection of concepts
- Integration of standards through mapping into reference terminology (UMLS)

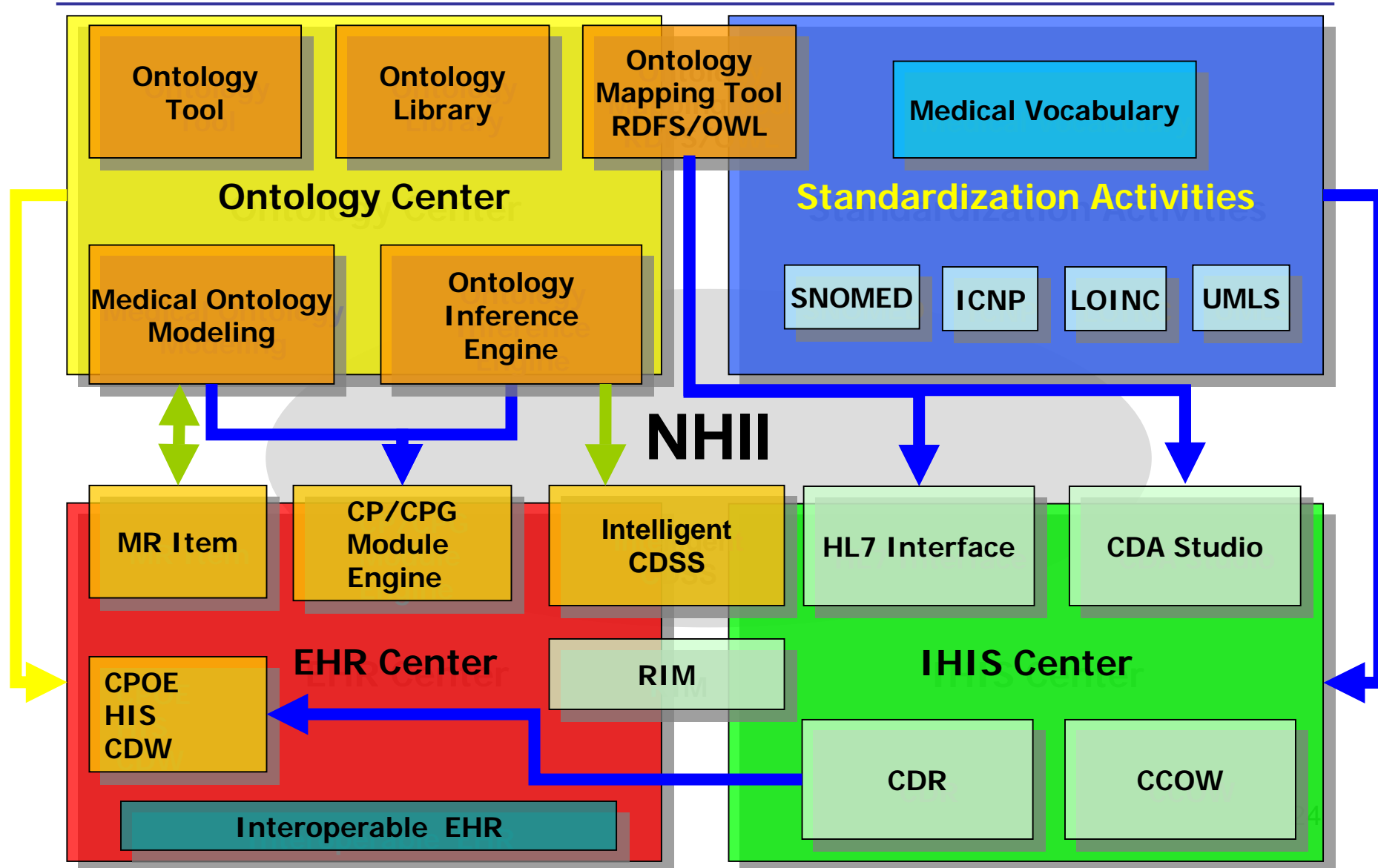
◆ Phase 2: (05-06)

- Expansion of collection of concepts in data dictionary to support development of hospital EHR (public hospital EHR)

◆ Phase 3: (06-)

- Maintenance and facilitation of standard adoption
- Elaboration of data dictionary through adoption of ontological approaches to support advanced functionalities of EHR
 - E.g> Decision support for medication safety, intelligent structured data entry

KNHII Projects Currently under Progress: R&D Centers



KNHII Projects Currently under Progress: Implementing EHR for Public Sectors

◆ Public Health Institution EHR project

- Goal: to implement comprehensive information system for clinical care, public health programs, and administration
- Target: Health centers (246), health subcenters (1,271), nurse practitioner post (1,899)
- Time frame: '05~'08
- Budget: about US\$ 65mil

◆ Public Hospitals EHR project

- Goal: to implement interoperable EHRs for public hospitals including academic medical centers
- Target: academic medical centers (14), general hospitals (41)
- Time frame: '07~'10
- Budget: about US\$ 300mil

KNHII Projects Currently under Progress: Dissemination EHR for Private Sectors

◆ Dilemma

- Investment : Private hospitals
- Benefit : Public/Society
- Massive investment and long-pending and indirect benefit
- Low investment priority for information system

◆ Strategy

- Cost-benefit analysis through demo project
- Support private hospital informatization through provision of low interest loan or differential fee schedule

Several Issues

- ◆ Concern on privacy and confidentiality
- ◆ Complexity and magnitude
 - Difficult to manage in well coordinated way
- ◆ Lack of consensus among stakeholders
 - e-prescriptions: conflict between physicians and pharmacist
 - KNHII architecture
- ◆ Lack of experts
 - Need for international collaboration
- ◆ Lack of strong political leadership

Conclusion

- ◆ Well designed implementation of interoperable EHR in public sectors
- ◆ Development and validation standards
 - Facilitate adoption of interoperable EHR in private sectors
- ◆ Need for international collaboration
 - Lessons from countries which started to implemented NHII

Thank you