



# e-Health Workshop : Interoperability

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**<http://www.ihis.or.kr>**



# Rationale

## Life Saver

“Care Information anytime anywhere”



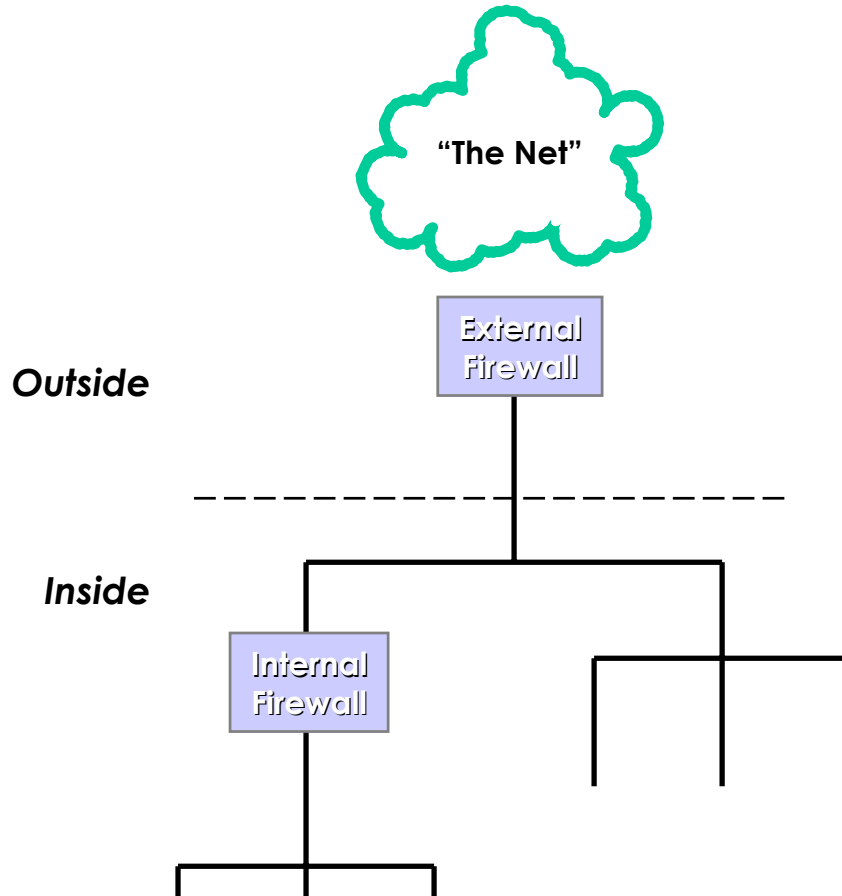
# Background

- Economy
- Geriatric society
- Chronic Disease management
- Developing countries' need
- Communication between patients and care providers
- ISO, ITU-T, WHO, Space Agencies, others push for e-Health Standardization

“Hot topic”



# Internet and Multimedia based EHR



- Access to search engines
- Security
- Access to specific info sources with enhanced search
- Electronic mail
- **Patient Education (wellness)**
- **Continuing Medical Education**
- Internal Web servers for information distribution
- Remote access
- **Tele Medicine**
- **Tele Radiology**
- **Electronic Patient Record**



# Multimedia based EMR

*Functional Components of EMRs should include:*

Electronic access to test results

Master member index

Clinical documentation

Physician order entry

Scanned paper documents

Clinical protocols

Clinical alerts

Diagnostic imagery

Clinical decision support

Video

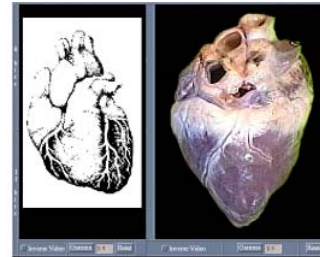
Audio



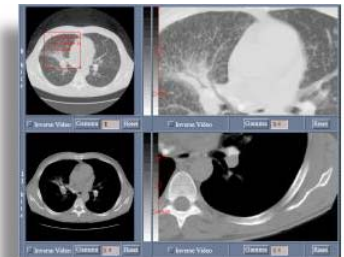
**Lab Results**



**Drug Information**



**Photo Images**



**Radiology  
y  
Images**

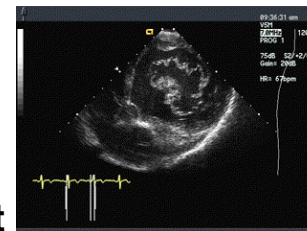


**Digital  
Video**

**Scanned  
Documents /  
Other Objects  
(OLE)**



**ECG Trace**



Source: Center for Healthcare Information Management

July 16, 2003

At ISIS



# e-Health Systems

- Business Models
- Communications and messaging

Interoperability :

Functional

Semantic

Human



# Interoperability

- Interoperability : ability of two or more system or components to **exchange information** and to **use the information** that has been exchanged.

source : IEEE Standard Computer Dictionary :  
A Compilation of IEEE Standard  
Computer Glossaries, IEEE, 1990

Functional interoperability

Semantic interoperability

Human interoperability



# Interoperability (2)

- Standards required

Vocabulary, terminology, coding

- ICD 9 CM, ICD 10, ICD 03 (WHO)
- SNOMED RT, SNOMED CT (CAP)

- READ

- LOINC(Logical Object Identifier  
Nomenclature and Code)

(C. McDonald, Indiana Univ)

- HL7 Vocabulary (Ed Hammond)

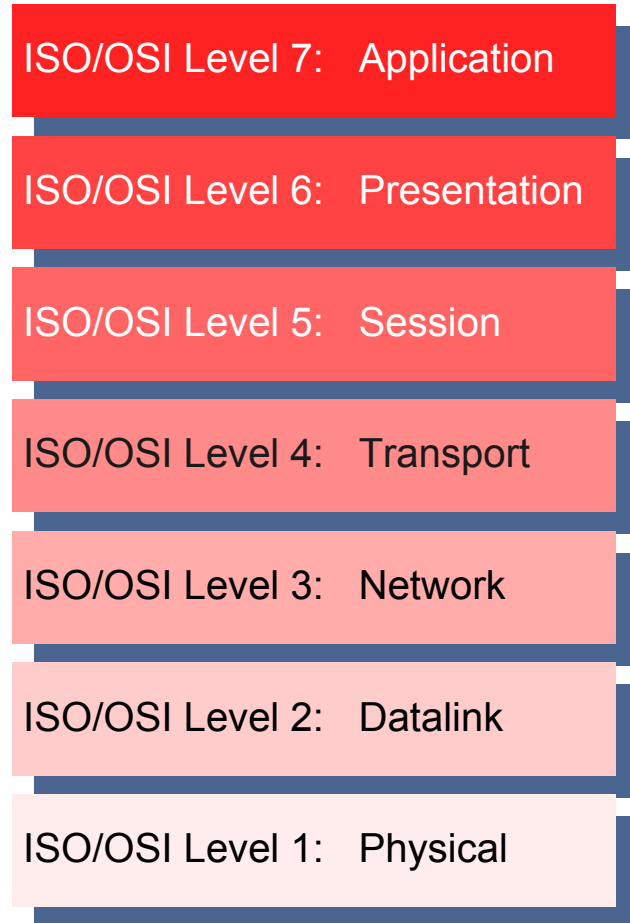
Unique ID – patients, providers, health  
care organizations, employers,  
insurance co, place of birth, country, etc





# ISO/OSI 7 Layers

- Focus is primarily on Level 7 inter-operability
- Medical Device Communications covers all 7 layers.





# e-Health Workshop

- ISIS - Profs. S K Mun : managing DM CHF  
J Collmann : HIPAA  
HY Chung : OR 2020
- IHIS – Prof IK Kim : developing IHIS  
JW Choi : vEMR and CDA
- Demo on “Cross Strait Endoscopy Telehealth”
- IBM – Information Challenges in HC Industry
- SDS – U-Healthcare and IT
- Panel Discussion
- Closing remarks



# Thank you



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