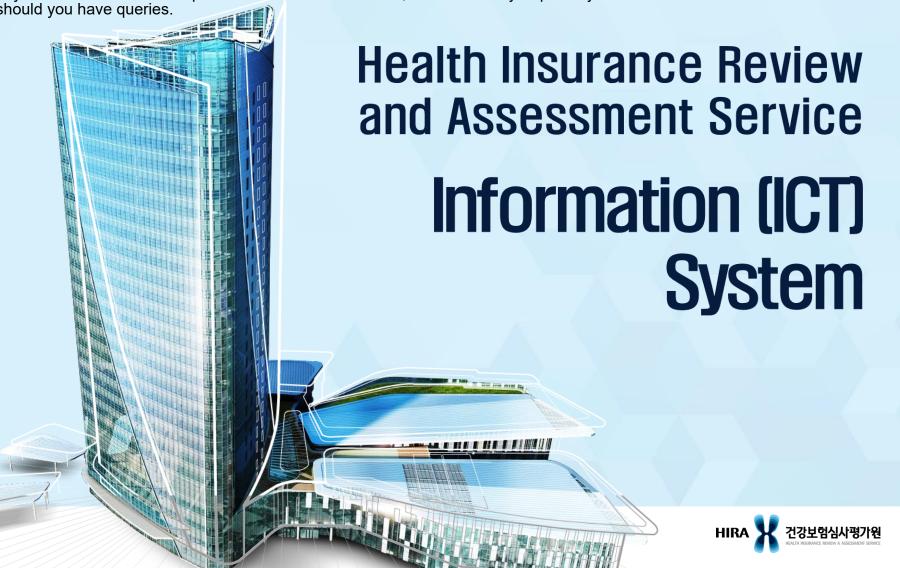
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# CONTENTS

- 01 Development(History) of HIRA ICT
- **02** Business Environment
- 03 Major systems
- **04** Security and operation
- **05** Certifications and Patient



### Development(History) of ICT System

Intro to HIRA's ICT System

Expansionary

Period

(CS/Web-based)

Take-off Period (Web-based)

1979 - 1989

Introductory Period Host-based

Developmental Period (Host/CS-based)

1990 - 2002

- 1979: delegated system operation to Korean Institute of Science and Technology
- System establishment (1982-1989)
- Medical insurance information system (Host-based)
- System for Federation of Korean Medical Insurance Societies
- Information systems of the branch offices

- 1994: introduction of claims using digital media (CD, diskette)
- 1995: pilot program of claims using EDI
- 1996: expansion of EDI claims
- 1999: establishment of the **Integrated Medical Insurance** Data Network (CS-based)
- 2000: separation of prescribing and dispensing & certification of claim SW

• 2003: establishment of the Data Warehouse (DW)

- 2007: ISO 9001 Quality Management System certification in all areas of the **IT System**
- System establishment (2008-2011)
- Korea Pharmaceutical Information Service (KPIS)
- Drug Utilization Review (DUR)
- Medical Claim Portal Service (MCPoS)

- 2013: establishment of a new generation system
  - Medical claim review (Web-based)
  - Benefit quality assessment
- 2013: auto insurance review
- 2014: certification of ICT Center according to **International Standards** (ISO20000)
- 2014: establishment of Open Healthcare Big Data System (Supporting Government 3.0)

2015: Healthcare Resource Reporting Portal

3

\* CS: Client-Server

# Ith Insurance Review & Assessment Servi

#### **Business Environment**



#### **Indicators**



91,545 providers



1.5 1billion claims annually



USD 72 biillion in medical fees annually

Requirements

Quick and accurate processing of large amounts of data

Expansion of real-time services such as DUR

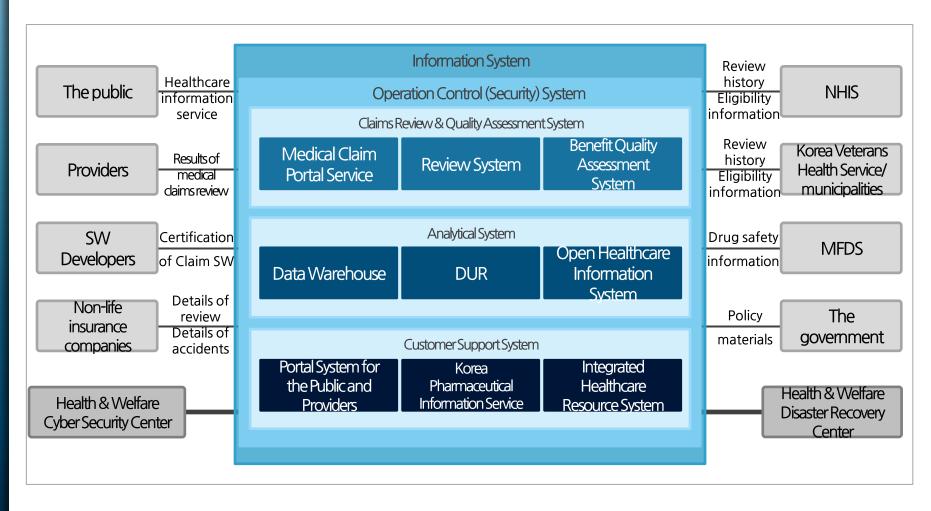
Better protection of privacy and a more stable IT system

Scale of the ICT System

Servers	187 UNIX servers (329 small- to medium-sized servers)
Disk storage size	3.4PB
No. of programs	69,000 copies
No. of personnel	264

- organization of information system





- Medical claims review system

Receipt of claims (automatic check Up) → (Screen) Review → **Decision** → **Post-Factum Management/Monitoring KT Relay Center** Simple error check up on the Portal after Paper, diskette (0.2%) MCPoS (96.5%) EDI (3.3%) submission Healthcare provider Claim filing Auto Check Up Review Criteria **Electronic Review** Statistics on the Screen Review provider's resources Prescription Index DW Review completion Storage of **EDW** reimbursement Review decision information Preparation of reim-Mart bursement information Notification of NHIS Eligibility check review results Processing of appeal **Benefit Quality** Re-review decision **Appeal Assessment** Notification of appeal results Preparation of Statistics Analysis Provider calculation files Notification of benefit quality

assessment results

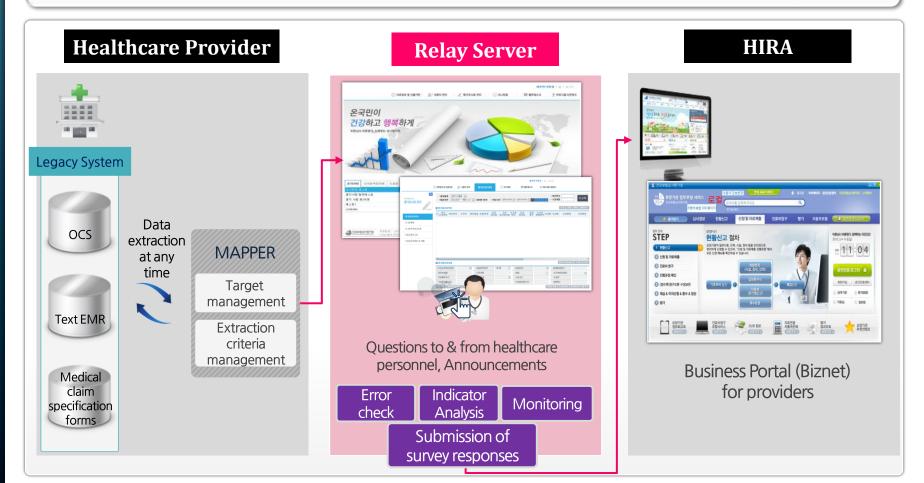
Medical Claim Review System

- Benefit quality assessment system

#### **Overview**

 A system that links EMR with assessment survey tables in real-time for efficient collection of responses, reducing providers' administrative burden and supporting their autonomous healthcare quality management

Benefit Quality Assessment System



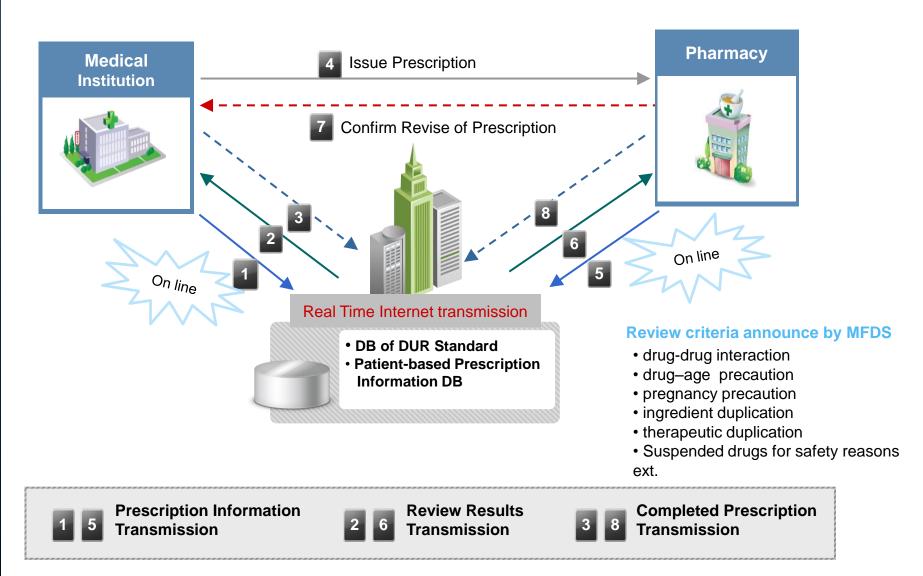
**NHIS** 

Benefit quality assessment system

Planning  $\rightarrow$  Gathering base data  $\rightarrow$  Collecting survey responses → Calculating assessment results HIRA Assessment System **Planning** Criteria Claim Specific plans specification forms DW Gathering base data Info on Claim specification providers **Review System** Master files Reports on providers' resources Mortality data Submit survey Mortality data tables for each patient & item Collecting survey table data Ministry of the Interior Collecting survey Information on emergency Healthcare tables room arrivals providers Error check Reliability check Results Ministry of Public published Calculating assessment results Safety and Security Calculate indicators Healthcare Citizens per provider & providers Incentives/ composite results. disincentives **Appeals** 

- DUR (Drug Utilization Review)



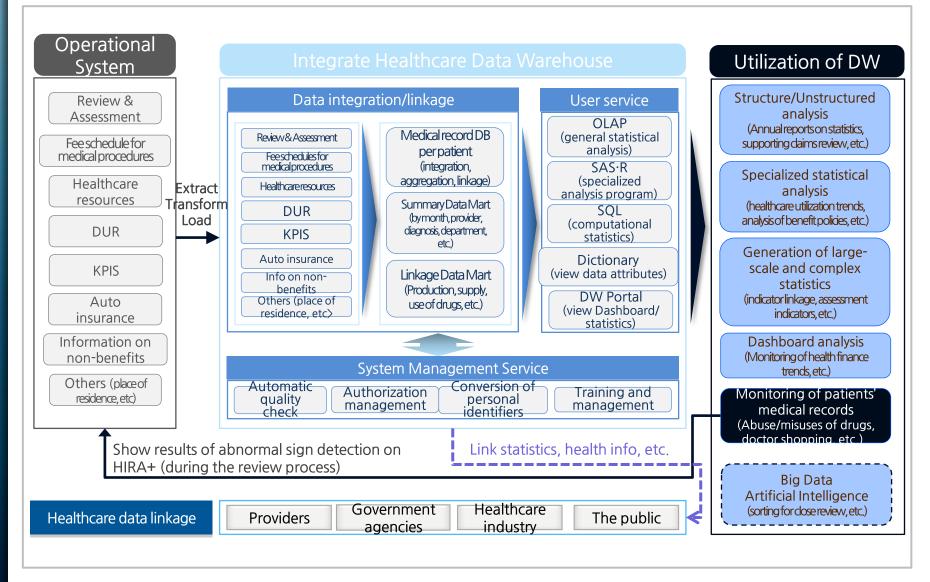


# Health Insurance Review & Assessment Service

#### **Major systems**

- DW (Data Warehouse)

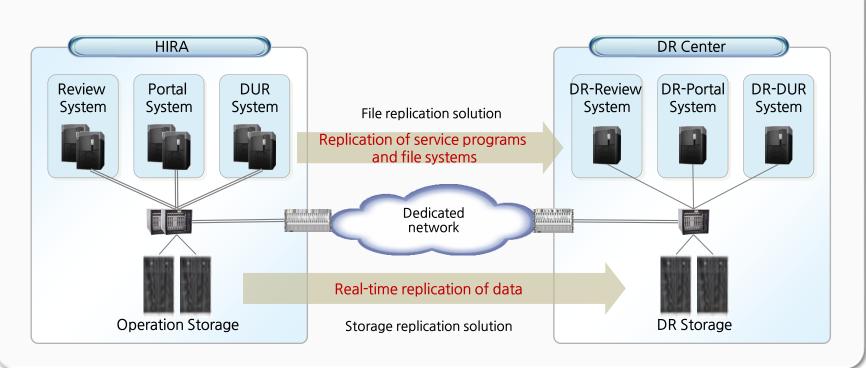




#### Disaster Recovery System



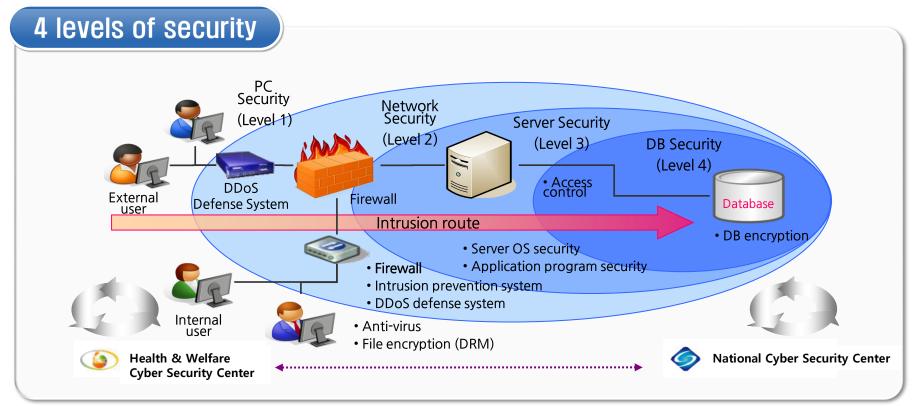




- Continuity of key information systems even in times of disasters
  - real-time data replication
  - regular mock disaster exercises every half year

## Security and operation

Security



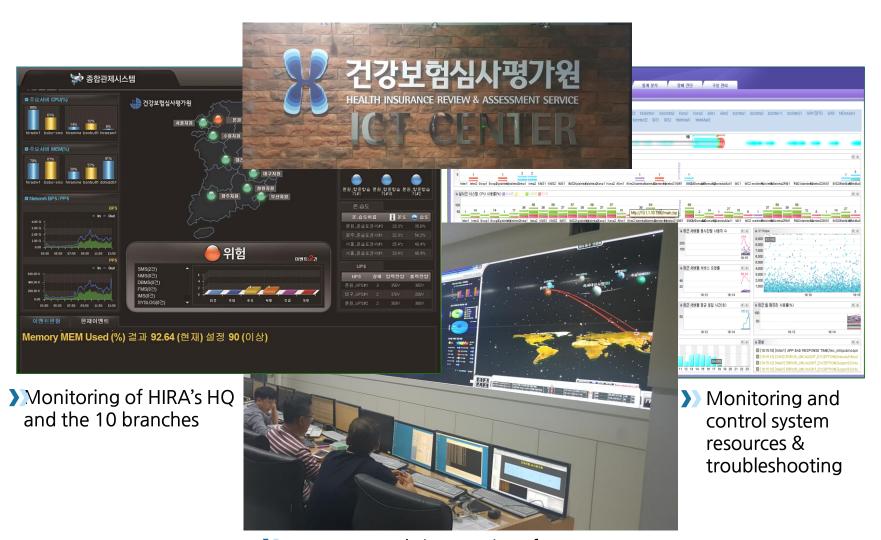
Intro to HIRA's ICT System

Level	내용
PC security (Level 1)	User authentication, central management of antivirus programs, digital rights management (DRM), flash memory access control, etc.
Network security (Level 2)	Network separation, intrusion blocking and prevention system, firewalls, DDoS defense system, VPN, etc.
Server security (Level 3)	Server security (SecureOS), access control, integrated access record management system, etc.
DB security (Level 4)	Encryption of DB with important info such as personal info, DB access control and access record management, etc.

### Security and operation

Operation control system





>> Non-stop, real-time service of Operation Control System

#### **Certifications and Patent**



#### International Patent

<sup>®</sup> Electronic Review of Medical Claims <sub>a</sub>, Business Method

- '07 Republic of South Africa
- '08 Japan
- '09 Singapore, Australia
- '10 Vietnam
- '12 U.S.

#### ISO9001 and ISO20000

- '05 EDI review system
- '06 DW and Mining system
- '07 IT system (including web portal service)
- '10 KPIS system
- '12 DUR and VOC system
- '14 ISO20000 (IT Service Management)

#### Database Quality Certification (Korea Data Agency)

- 11 DQC-M(Management) Certification of agency-wide data management system
- '11 '17 DQC-V(Value) Certification of data quality (Review System, DW)
- '14 '16 DQC-S(Security) Certification of data security (Review System)

# Q & A



# Thank You